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QUASICLASSICAL RATE COEFFICIENTS FOR THE H + H_2 REACTION

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Abstract

An electronic version (containing minor editorial changes) of the quasiclassical state-to-state rate coefficients calculated for the $H + H_2(v) \rightarrow H + H_2(v')$ reaction on different potential energy surfaces is presented here. The rate coefficients are given at different translational and rotational temperatures for a wide range of initial vibrational states. The original printed text was published as A. Laganà, G. Ochoa de Aspuru, E. Garcia 1996. Quasiclassical and quantum rate coefficients for the H + H_2 reaction by the Università di Perugia, PERUGIA.

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1. Introduction

The accurate calculation of the detailed (from a given reactant vibrational state v to a given product vibrational state v') rate coefficients of the

$$H + H_2(v) \rightarrow H + H_2(v') \tag{1}$$

elementary reaction is of key importance for modelling light negative ions sources.[1] This has prompted us to carry out extended quasiclassical trajectory (QCT)[2] of these rate coefficients.

QCT calculations were carried out using different potential energy surfaces (PESs). The most extensively used PES is that of Liu, Siegbahn, Truhlar and Horowitz (LSTH).[3] Other calculations were carried out on the Double Many Body Expansion (DMBE)[4] and on the Boothroyd, Keogh, Martin, and Peterson (BKMP)[5] PESs.

On the LSTH PES quasiclassical calculations were performed also for the isotope variant

$$D + D_2(v) \rightarrow D + D_2(v') \tag{2}$$

In our investigation the effect of the temperature T of the system (or, more in detail, its translational T_{tr} and rotational T_{rot} components) on its reactivity was analyzed by varying both T_{tr} and T_{rot} from 300 K to 4000 K.

2. The quasiclassical calculations

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Although quasiclassical approaches are conceptually simple, to carry out state-to-state calculations at different temperatures of the system is not a trivial computational task. In fact, in a quasiclassical approach, the detailed (from a given reactant vibrational state v to a given product vibrational state v') rate coefficients are formulated as

$$k_{v,v'}(T_{tr},T_{rot}) = \frac{\sum_j g(2j+1)e^{-\varepsilon_j/kT_{rot}}}{(k^3T_{tr}^3\pi\mu/8)^{1/2}Q_R}$$

$$\int_0^\infty dE_{tr}E_{tr}e^{-E_{tr}/kT_{tr}}\sigma_{vj,v'}(E_{tr}) \tag{3}$$

where g is 1 for even and 3 for odd rotational H_2 levels (g is 2 for even and 1 for odd rotational D_2 levels), μ is the reduced mass of H-H_2 (or D-D_2), k is the Boltzmann's constant, Q_R is the H_2 rotational partition function, E_{tr} is the translational energy, ε_j the energy of the jth rotational state, and $\sigma_{vj,v'}$ is the degeneracy averaged detailed reactive cross section $\sigma_{vj,v'j'}$ summed over the product rotational states j'. The quasiclassical detailed cross section is defined as a five dimensional integral. When using a Monte Carlo technique this is usually approximated as

$$\sigma_{vj,v'j'} = \frac{\pi b_{max}^2}{M}\sum_{i=1}^{M} f_{vj,v'j'}(\xi_1,\xi_2,\xi_3,\xi_4,\xi_5) \tag{4}$$

where M is the number of values of the $f_{vj,v'j'}(\xi_1,\xi_2,\xi_3,\xi_4,\xi_5)$ function considered for the Monte Carlo approximation and b_{max} is the maximum value of the impact parameter leading to reactive encounters. $f_{vj,v'j'}(\xi_1,\xi_2,\xi_3,\xi_4,\xi_5)$ is a Boolean function. Its value is 1 only when, after integrating the motion equations (trajectory) starting from a given initial values of the five ξ variables with a vibrational and a rotational energy corresponding

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to those of the quantum vj reactant state, the final outcome can be assigned to the $v'j'$ quantum state of the products. This assignment is made using the nearest integer (NI) method.[6]

To calculate state-to-state rate coefficients for M_v reactant vibrational states, $M_{T_{tr}}$ translational temperatures, $M_{T_{rot}}$ rotational temperatures using batches of M_{batch} (in our calculations not less than 10^4) trajectories, a total number of $M = M_v M_{T_{tr}} M_{T_{rot}} M_{batch}$ trajectories need to be integrated. When the number of vibrational states M_v (the value of M_{batch} is also related to the value of M_v since when the number of internal states increases, the size of the trajectory batch has to be increased both to have a suitable statistics and to allow larger impact parameters) and/or the number of temperatures to be considered is fairly high, the cpu time needed for the calculations is so large that there is no alternative to the use of parallel[7] computers. In our case, quasiclassical trajectory calculations were carried out on parallel Cray and IBM machines as well as on a hypercube nCUBE 2.[8]

3. Tables of results

Calculated rate coefficients are reported in the enclosed tables for a given translational and rotational temperature. Units are $10^x \mathrm{cm}^3\mathrm{molec}^{-1}\mathrm{s}^{-1}$ with x being given in the round brackets. Initial vibrational states v are given in the first row while final states v' are reported in the first column.

Calculated rate constants are reported in the following order:

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1. H + H_2 non reactive LSTH values (Tables 1 - 25);
2. H + H_2 reactive LSTH values (Tables 26 - 50);
3. H + H_2 non reactive DMBE values (Tables 51 - 75);
4. H + H_2 reactive DMBE values (Tables 76 - 100);
5. H + H_2 non reactive BKMP values (Tables 101 - 125);
6. H + H_2 reactive BKMP values (Tables 126 - 150);
7. D + D_2 non reactive LSTH values (Tables 151 - 166);
8. D + D_2 reactive LSTH values (Tables 167 - 182).

Quasiclassical non reactive results have to be taken with some caution. As is well known, elastic ($v = v'$) rates are by definition unconverged. Inelastic ones, have been calculated using the same value of maximum impact parameter as reactive data. This and the poorer performance of the NI discretization method for non reactive transitions makes related computed rate constants less accurate.

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Table 1 H + H_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.378(-13)	.203(-11)	.484(-11)	.626(-11)	.315(-11)	.165(-11)
1		.868(-09)	.151(-11)	.512(-11)	.544(-11)	.308(-11)	.186(-11)
2			.221(-11)	.615(-11)	.625(-11)	.424(-11)	.217(-11)
3			.845(-09)	.736(-11)	.869(-11)	.512(-11)	.310(-11)
4				.903(-11)	.925(-11)	.836(-11)	.395(-11)
5				.731(-09)	.141(-10)	.922(-11)	.554(-11)
6					.178(-10)	.125(-10)	.747(-11)
7					.720(-09)	.181(-10)	.118(-10)
8						.230(-10)	.141(-10)
9						.881(-09)	.214(-10)
10						.784(-14)	.341(-10)
11							.844(-09)
12							.251(-12)

Table 2 H + H_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.171(-13)	.173(-11)	.436(-11)	.520(-11)	.443(-11)	.141(-11)
1		.863(-09)	.156(-11)	.459(-11)	.431(-11)	.283(-11)	.137(-11)
2			.174(-11)	.475(-11)	.675(-11)	.451(-11)	.304(-11)
3			.844(-09)	.721(-11)	.719(-11)	.544(-11)	.380(-11)
4				.804(-11)	.889(-11)	.802(-11)	.311(-11)
5				.745(-09)	.117(-10)	.827(-11)	.507(-11)
6					.151(-10)	.130(-10)	.861(-11)
7					.594(-09)	.181(-10)	.117(-10)
8						.200(-10)	.155(-10)
9						.725(-09)	.217(-10)
10						.349(-13)	.307(-10)
11							.659(-09)
12							.283(-12)

Table 3 H + H_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.442(-14)	.126(-11)	.369(-11)	.386(-11)	.353(-11)	.119(-11)
1		.863(-09)	.117(-11)	.364(-11)	.425(-11)	.339(-11)	.748(-12)
2			.113(-11)	.398(-11)	.682(-11)	.372(-11)	.280(-11)
3			.849(-09)	.522(-11)	.696(-11)	.463(-11)	.422(-11)
4			.139(-13)	.635(-11)	.787(-11)	.762(-11)	.508(-11)
5				.768(-09)	.107(-10)	.801(-11)	.472(-11)
6				.179(-13)	.128(-10)	.121(-10)	.965(-11)
7					.614(-09)	.175(-10)	.124(-10)
8					.135(-12)	.193(-10)	.120(-10)
9						.737(-09)	.196(-10)
10						.733(-12)	.274(-10)
11							.624(-09)
12							.143(-11)
13							.198(-13)

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Table 4 H + H_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.394(-13)	.737(-12)	.342(-11)	.421(-11)	.179(-11)	.153(-11)
1		.870(-09)	.862(-12)	.297(-11)	.387(-11)	.229(-11)	.124(-11)
2			.134(-11)	.341(-11)	.631(-11)	.430(-11)	.150(-11)
3			.859(-09)	.425(-11)	.687(-11)	.647(-11)	.361(-11)
4			.854(-13)	.563(-11)	.708(-11)	.651(-11)	.433(-11)
5				.780(-09)	.100(-10)	.873(-11)	.604(-11)
6				.263(-12)	.103(-10)	.124(-10)	.861(-11)
7					.767(-09)	.147(-10)	.113(-10)
8					.115(-11)	.169(-10)	.111(-10)
9					.834(-13)	.882(-09)	.154(-10)
10						.103(-11)	.249(-10)
11						.125(-12)	.757(-09)
12							.445(-11)
13							.133(-12)
14							.212(-13)

Table 5 H + H_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.377(-12)	.573(-12)	.255(-11)	.457(-11)	.249(-11)	.822(-12)
1		.862(-09)	.738(-12)	.345(-11)	.384(-11)	.256(-11)	.114(-11)
2		.102(-12)	.255(-11)	.349(-11)	.445(-11)	.337(-11)	.243(-11)
3			.851(-09)	.445(-11)	.569(-11)	.443(-11)	.187(-11)
4			.604(-12)	.712(-11)	.606(-11)	.625(-11)	.286(-11)
5			.187(-13)	.758(-09)	.799(-11)	.789(-11)	.496(-11)
6				.123(-11)	.123(-10)	.116(-10)	.689(-11)
7				.140(-12)	.587(-09)	.116(-10)	.845(-11)
8					.273(-11)	.199(-10)	.117(-10)
9					.197(-12)	.684(-09)	.177(-10)
10					.512(-13)	.395(-11)	.289(-10)
11						.170(-12)	.568(-09)
12							.542(-11)
13							.270(-12)

Table 6 H + H_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.223(-12)	.441(-11)	.821(-11)	.889(-11)	.294(-11)	.791(-12)
1		.111(-08)	.480(-11)	.781(-11)	.774(-11)	.582(-11)	.269(-11)
2			.502(-11)	.991(-11)	.849(-11)	.734(-11)	.413(-11)
3			.104(-08)	.120(-10)	.128(-10)	.794(-11)	.387(-11)
4				.138(-10)	.151(-10)	.106(-10)	.444(-11)
5				.871(-09)	.166(-10)	.121(-10)	.541(-11)
6				.129(-13)	.194(-10)	.161(-10)	.138(-10)
7					.661(-09)	.258(-10)	.144(-10)
8					.410(-13)	.282(-10)	.187(-10)
9						.846(-09)	.254(-10)
10						.219(-12)	.353(-10)
11							.811(-09)
12							.899(-12)
13							.141(-13)

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Table 7 H + H_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.238(-12)	.400(-11)	.784(-11)	.652(-11)	.533(-11)	.198(-11)
1		.111(-08)	.458(-11)	.823(-11)	.662(-11)	.457(-11)	.255(-11)
2			.432(-11)	.977(-11)	.843(-11)	.696(-11)	.186(-11)
3			.106(-08)	.106(-10)	.957(-11)	.715(-11)	.343(-11)
4				.119(-10)	.125(-10)	.103(-10)	.597(-11)
5				.902(-09)	.142(-10)	.130(-10)	.701(-11)
6				.191(-13)	.204(-10)	.151(-10)	.122(-10)
7					.885(-09)	.185(-10)	.158(-10)
8					.107(-12)	.271(-10)	.175(-10)
9						.109(-08)	.227(-10)
10						.216(-12)	.354(-10)
11							.104(-08)
12							.133(-11)
13							.292(-13)

Table 8 H + H_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.265(-12)	.330(-11)	.634(-11)	.703(-11)	.386(-11)	.173(-11)
1		.111(-08)	.357(-11)	.702(-11)	.609(-11)	.537(-11)	.221(-11)
2			.389(-11)	.826(-11)	.845(-11)	.407(-11)	.279(-11)
3			.106(-08)	.979(-11)	.107(-10)	.698(-11)	.338(-11)
4			.726(-13)	.106(-10)	.134(-10)	.927(-11)	.495(-11)
5				.925(-09)	.137(-10)	.134(-10)	.713(-11)
6				.976(-13)	.183(-10)	.130(-10)	.927(-11)
7					.710(-09)	.205(-10)	.117(-10)
8					.339(-12)	.266(-10)	.158(-10)
9						.875(-09)	.239(-10)
10						.797(-12)	.345(-10)
11						.450(-13)	.744(-09)
12							.451(-11)
13							.756(-13)
14							.318(-13)

Table 9 H + H_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.229(-12)	.327(-11)	.576(-11)	.604(-11)	.452(-11)	.109(-11)
1		.112(-08)	.317(-11)	.589(-11)	.642(-11)	.516(-11)	.191(-11)
2		.259(-13)	.363(-11)	.736(-11)	.880(-11)	.528(-11)	.393(-11)
3			.108(-08)	.751(-11)	.888(-11)	.521(-11)	.305(-11)
4			.142(-12)	.949(-11)	.116(-10)	.937(-11)	.384(-11)
5				.937(-09)	.122(-10)	.147(-10)	.716(-11)
6				.972(-12)	.178(-10)	.138(-10)	.688(-11)
7				.571(-13)	.906(-09)	.156(-10)	.992(-11)
8					.169(-11)	.238(-10)	.158(-10)
9					.110(-12)	.106(-08)	.229(-10)
10						.295(-11)	.358(-10)
11						.175(-12)	.935(-09)
12							.780(-11)
13							.141(-11)

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Table 10 H + H_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.786(-12)	.308(-11)	.503(-11)	.590(-11)	.233(-11)	.207(-11)
1		.111(-08)	.323(-11)	.669(-11)	.673(-11)	.282(-11)	.101(-11)
2		.272(-12)	.522(-11)	.712(-11)	.557(-11)	.482(-11)	.225(-11)
3		.815(-13)	.106(-08)	.736(-11)	.840(-11)	.659(-11)	.200(-11)
4		.302(-13)	.161(-11)	.127(-10)	.848(-11)	.894(-11)	.676(-11)
5			.227(-13)	.911(-09)	.125(-10)	.130(-10)	.459(-11)
6				.246(-11)	.220(-10)	.140(-10)	.904(-11)
7				.104(-12)	.675(-09)	.150(-10)	.142(-10)
8					.424(-11)	.269(-10)	.119(-10)
9					.296(-12)	.811(-09)	.236(-10)
10						.636(-11)	.343(-10)
11						.676(-12)	.692(-09)
12						.459(-13)	.968(-11)
13							.112(-11)
14							.128(-12)

Table 11 H + H_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.309(-11)	.108(-10)	.148(-10)	.105(-10)	.921(-11)	.310(-11)
1		.156(-08)	.100(-10)	.135(-10)	.131(-10)	.560(-11)	.385(-11)
2			.129(-10)	.160(-10)	.114(-10)	.956(-11)	.412(-11)
3			.140(-08)	.202(-10)	.147(-10)	.955(-11)	.504(-11)
4			.724(-13)	.241(-10)	.200(-10)	.153(-10)	.915(-11)
5				.113(-08)	.241(-10)	.163(-10)	.961(-11)
6				.513(-12)	.296(-10)	.198(-10)	.119(-10)
7					.855(-09)	.234(-10)	.123(-10)
8					.702(-12)	.346(-10)	.286(-10)
9					.189(-13)	.114(-08)	.283(-10)
10						.133(-11)	.468(-10)
11							.111(-08)
12							.324(-11)
13							.142(-12)
14							.385(-13)

Table 12 H + H_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.264(-11)	.103(-10)	.138(-10)	.106(-10)	.683(-11)	.560(-11)
1		.156(-08)	.998(-11)	.128(-10)	.123(-10)	.550(-11)	.332(-11)
2			.103(-10)	.142(-10)	.102(-10)	.740(-11)	.359(-11)
3			.141(-08)	.180(-10)	.137(-10)	.991(-11)	.588(-11)
4			.168(-12)	.225(-10)	.170(-10)	.142(-10)	.779(-11)
5				.115(-08)	.275(-10)	.160(-10)	.821(-11)
6				.251(-12)	.285(-10)	.207(-10)	.108(-10)
7					.875(-09)	.279(-10)	.148(-10)
8					.640(-12)	.356(-10)	.245(-10)
9						.116(-08)	.294(-10)
10						.155(-11)	.443(-10)
11							.111(-08)
12							.473(-11)
13							.258(-12)
14							.485(-13)

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Table 13 H + H_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.234(-11)	.853(-11)	.131(-10)	.927(-11)	.773(-11)	.347(-11)
1		.157(-08)	.875(-11)	.127(-10)	.947(-11)	.723(-11)	.296(-11)
2		.101(-12)	.110(-10)	.154(-10)	.134(-10)	.756(-11)	.477(-11)
3			.144(-08)	.145(-10)	.149(-10)	.120(-10)	.551(-11)
4			.386(-12)	.197(-10)	.180(-10)	.134(-10)	.823(-11)
5				.119(-08)	.253(-10)	.133(-10)	.905(-11)
6				.769(-12)	.259(-10)	.220(-10)	.134(-10)
7				.265(-13)	.117(-08)	.245(-10)	.133(-10)
8					.143(-11)	.359(-10)	.204(-10)
9					.409(-13)	.148(-08)	.308(-10)
10						.276(-11)	.438(-10)
11						.151(-12)	.140(-08)
12						.159(-13)	.914(-11)
13							.193(-11)
14							.263(-12)

Table 14 H + H_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.273(-11)	.863(-11)	.121(-10)	.674(-11)	.767(-11)	.197(-11)
1		.156(-08)	.827(-11)	.118(-10)	.129(-10)	.677(-11)	.215(-11)
2		.115(-12)	.131(-10)	.142(-10)	.120(-10)	.589(-11)	.454(-11)
3			.144(-08)	.136(-10)	.117(-10)	.924(-11)	.484(-11)
4			.137(-11)	.224(-10)	.144(-10)	.131(-10)	.528(-11)
5				.119(-08)	.188(-10)	.176(-10)	.913(-11)
6				.225(-11)	.249(-10)	.153(-10)	.110(-10)
7				.381(-13)	.115(-08)	.202(-10)	.107(-10)
8					.437(-11)	.372(-10)	.160(-10)
9					.257(-12)	.143(-08)	.290(-10)
10					.000(-00)	.746(-11)	.434(-10)
11					.235(-13)	.645(-12)	.132(-08)
12						.584(-13)	.159(-10)
13						.298(-13)	.171(-11)
14							.374(-12)

Table 15 H + H_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.435(-11)	.823(-11)	.124(-10)	.902(-11)	.456(-11)	.145(-11)
1		.156(-08)	.865(-11)	.116(-10)	.102(-10)	.576(-11)	.386(-11)
2		.105(-11)	.163(-10)	.152(-10)	.713(-11)	.686(-11)	.645(-11)
3		.674(-13)	.142(-08)	.152(-10)	.135(-10)	.747(-11)	.463(-11)
4		.000(-00)	.383(-11)	.287(-10)	.161(-10)	.100(-10)	.574(-11)
5		.115(-12)	.202(-12)	.115(-08)	.180(-10)	.139(-10)	.667(-11)
6				.722(-11)	.342(-10)	.147(-10)	.825(-11)
7				.711(-12)	.836(-09)	.217(-10)	.111(-10)
8				.408(-13)	.847(-11)	.444(-10)	.219(-10)
9					.140(-11)	.107(-08)	.292(-10)
10					.855(-13)	.111(-10)	.478(-10)
11						.164(-11)	.954(-09)
12						.387(-12)	.210(-10)
13							.190(-11)
14							.387(-12)

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Table 16 H + H_2 LSTH NON REACTIVE T_{tr}=2000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.111(-10)	.177(-10)	.200(-10)	.177(-10)	.115(-10)	.536(-11)
1		.217(-08)	.169(-10)	.219(-10)	.178(-10)	.129(-10)	.714(-11)
2		.635(-12)	.231(-10)	.183(-10)	.185(-10)	.108(-10)	.813(-11)
3		.204(-13)	.189(-08)	.219(-10)	.195(-10)	.143(-10)	.100(-10)
4			.155(-11)	.261(-10)	.225(-10)	.205(-10)	.799(-11)
5			.490(-13)	.153(-08)	.272(-10)	.186(-10)	.118(-10)
6				.174(-11)	.384(-10)	.257(-10)	.154(-10)
7				.136(-12)	.156(-08)	.291(-10)	.206(-10)
8					.353(-11)	.414(-10)	.254(-10)
9					.191(-12)	.206(-08)	.355(-10)
10					.105(-13)	.554(-11)	.546(-10)
11						.758(-12)	.210(-08)
12						.128(-12)	.140(-10)
13							.244(-11)
14							.382(-12)

Table 17 H + H_2 LSTH NON REACTIVE T_{tr}=2000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.117(-10)	.174(-10)	.193(-10)	.171(-10)	.107(-10)	.722(-11)
1		.217(-08)	.187(-10)	.199(-10)	.181(-10)	.115(-10)	.590(-11)
2		.758(-12)	.221(-10)	.212(-10)	.174(-10)	.121(-10)	.679(-11)
3		.923(-14)	.190(-08)	.216(-10)	.197(-10)	.112(-10)	.892(-11)
4			.135(-11)	.268(-10)	.225(-10)	.165(-10)	.846(-11)
5			.768(-13)	.156(-08)	.269(-10)	.239(-10)	.984(-11)
6			.137(-13)	.208(-11)	.428(-10)	.241(-10)	.184(-10)
7				.207(-12)	.157(-08)	.302(-10)	.250(-10)
8					.423(-11)	.382(-10)	.265(-10)
9					.319(-12)	.208(-08)	.321(-10)
10					.160(-13)	.716(-11)	.539(-10)
11						.107(-11)	.206(-08)
12						.151(-12)	.150(-10)
13						.472(-13)	.251(-11)
14							.667(-12)

Table 18 H + H_2 LSTH NON REACTIVE T_{tr}=2000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.108(-10)	.163(-10)	.199(-10)	.165(-10)	.110(-10)	.540(-11)
1		.217(-08)	.185(-10)	.190(-10)	.165(-10)	.101(-10)	.411(-11)
2		.115(-11)	.242(-10)	.186(-10)	.161(-10)	.110(-10)	.542(-11)
3		.400(-13)	.191(-08)	.216(-10)	.176(-10)	.143(-10)	.784(-11)
4			.182(-11)	.343(-10)	.220(-10)	.168(-10)	.103(-10)
5			.299(-13)	.158(-08)	.275(-10)	.204(-10)	.102(-10)
6			.118(-13)	.345(-11)	.426(-10)	.243(-10)	.187(-10)
7				.233(-12)	.159(-08)	.307(-10)	.199(-10)
8				.147(-13)	.631(-11)	.423(-10)	.228(-10)
9					.593(-12)	.206(-08)	.359(-10)
10					.227(-13)	.985(-11)	.616(-10)
11						.196(-11)	.203(-08)
12						.276(-12)	.223(-10)
13						.225(-13)	.436(-11)
14							.665(-12)

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Table 19 H + H_2 LSTH NON REACTIVE T_{tr}=2000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.128(-10)	.149(-10)	.171(-10)	.129(-10)	.108(-10)	.394(-11)
1		.217(-08)	.184(-10)	.183(-10)	.167(-10)	.858(-11)	.494(-11)
2		.158(-11)	.302(-10)	.208(-10)	.163(-10)	.118(-10)	.483(-11)
3		.326(-13)	.192(-08)	.215(-10)	.165(-10)	.109(-10)	.602(-11)
4		.000(-00)	.369(-11)	.378(-10)	.227(-10)	.130(-10)	.803(-11)
5		.000(-00)	.225(-12)	.156(-08)	.243(-10)	.211(-10)	.102(-10)
6		.191(-13)	.465(-13)	.635(-11)	.471(-10)	.201(-10)	.146(-10)
7				.100(-11)	.155(-08)	.307(-10)	.182(-10)
8				.124(-12)	.122(-10)	.545(-10)	.268(-10)
9				.295(-13)	.122(-11)	.197(-08)	.361(-10)
10					.582(-13)	.156(-10)	.765(-10)
11					.358(-13)	.313(-11)	.190(-08)
12					.174(-13)	.994(-12)	.301(-10)
13						.107(-12)	.527(-11)
14						.214(-13)	.934(-12)

Table 20 H + H_2 LSTH NON REACTIVE T_{tr}=2000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.177(-10)	.165(-10)	.173(-10)	.129(-10)	.805(-11)	.431(-11)
1		.214(-08)	.190(-10)	.171(-10)	.146(-10)	.688(-11)	.444(-11)
2		.478(-11)	.380(-10)	.182(-10)	.166(-10)	.859(-11)	.504(-11)
3		.350(-12)	.188(-08)	.245(-10)	.198(-10)	.104(-10)	.691(-11)
4		.593(-13)	.107(-10)	.511(-10)	.198(-10)	.160(-10)	.632(-11)
5			.586(-12)	.150(-08)	.274(-10)	.186(-10)	.120(-10)
6			.297(-12)	.173(-10)	.637(-10)	.255(-10)	.150(-10)
7				.231(-11)	.146(-08)	.272(-10)	.196(-10)
8				.463(-12)	.208(-10)	.632(-10)	.310(-10)
9				.647(-13)	.289(-11)	.193(-08)	.331(-10)
10				.000(-00)	.105(-11)	.286(-10)	.697(-10)
11				.201(-13)	.268(-12)	.558(-11)	.188(-08)
12						.710(-12)	.434(-10)
13						.312(-12)	.475(-11)
14						.315(-13)	.145(-11)

Table 21 H + H_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.316(-10)	.293(-10)	.174(-10)	.177(-10)	.252(-10)	.844(-11)
1		.361(-10)	.285(-10)	.232(-10)	.188(-10)	.157(-10)	.827(-11)
2		.279(-08)	.289(-10)	.247(-10)	.161(-10)	.150(-10)	.109(-10)
3		.737(-11)	.464(-10)	.338(-10)	.246(-10)	.191(-10)	.128(-10)
4		.113(-11)	.237(-08)	.336(-10)	.216(-10)	.170(-10)	.125(-10)
5		.118(-12)	.725(-11)	.581(-10)	.284(-10)	.179(-10)	.188(-10)
6			.174(-11)	.189(-08)	.354(-10)	.263(-10)	.172(-10)
7			.552(-12)	.149(-10)	.629(-10)	.395(-10)	.249(-10)
8			.119(-12)	.209(-11)	.146(-08)	.761(-10)	.286(-10)
9			.000(-00)	.594(-12)	.169(-10)	.232(-08)	.384(-10)
10			.000(-00)	.430(-13)	.291(-11)	.201(-10)	.840(-10)
11			.259(-13)	.115(-12)	.111(-11)	.519(-11)	.172(-08)
12				.000(-00)	.483(-12)	.127(-11)	.354(-10)
13				.344(-13)	.123(-12)	.258(-12)	.938(-11)
14					.910(-13)		.489(-12)

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Table 22 H + H_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.321(-10)	.339(-10)	.236(-10)	.185(-10)	.232(-10)	.867(-11)
1		.383(-10)	.327(-10)	.246(-10)	.197(-10)	.184(-10)	.719(-11)
2		.280(-08)	.248(-10)	.215(-10)	.139(-10)	.175(-10)	.154(-10)
3		.889(-11)	.436(-10)	.306(-10)	.268(-10)	.232(-10)	.952(-11)
4		.109(-11)	.238(-08)	.359(-10)	.265(-10)	.197(-10)	.151(-10)
5		.192(-12)	.821(-11)	.581(-10)	.343(-10)	.254(-10)	.146(-10)
6			.208(-11)	.188(-08)	.422(-10)	.231(-10)	.169(-10)
7			.449(-12)	.141(-10)	.670(-10)	.291(-10)	.251(-10)
8			.319(-13)	.221(-11)	.143(-08)	.778(-10)	.341(-10)
9			.818(-13)	.557(-12)	.176(-10)	.232(-08)	.471(-10)
10				.103(-12)	.411(-11)	.205(-10)	.801(-10)
11				.879(-13)	.133(-11)	.479(-11)	.170(-08)
12				.000(-00)	.716(-12)	.175(-11)	.344(-10)
13				.817(-13)	.123(-12)	.270(-12)	.843(-11)
14					.910(-13)		.117(-11)

Table 23 H + H_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.272(-10)	.332(-10)	.236(-10)	.186(-10)	.147(-10)	.103(-10)
1		.377(-10)	.293(-10)	.305(-10)	.146(-10)	.103(-10)	.648(-11)
2		.280(-08)	.272(-10)	.244(-10)	.159(-10)	.132(-10)	.116(-10)
3		.956(-11)	.439(-10)	.293(-10)	.236(-10)	.170(-10)	.136(-10)
4		.916(-12)	.238(-08)	.350(-10)	.182(-10)	.160(-10)	.170(-10)
5		.127(-12)	.119(-10)	.587(-10)	.361(-10)	.182(-10)	.168(-10)
6		.789(-13)	.164(-11)	.190(-08)	.422(-10)	.269(-10)	.147(-10)
7		.428(-13)	.253(-12)	.160(-10)	.620(-10)	.380(-10)	.271(-10)
8			.784(-13)	.233(-11)	.142(-08)	.898(-10)	.219(-10)
9			.391(-13)	.499(-12)	.280(-10)	.230(-08)	.407(-10)
10				.250(-12)	.414(-11)	.259(-10)	.128(-09)
11				.471(-13)	.205(-11)	.571(-11)	.162(-08)
12				.533(-13)	.692(-12)	.281(-11)	.451(-10)
13						.514(-12)	.865(-11)
14						.156(-12)	.196(-11)

Table 24 H + H_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.367(-10)	.333(-10)	.269(-10)	.180(-10)	.138(-10)	.878(-11)
1		.294(-08)	.316(-10)	.244(-10)	.204(-10)	.127(-10)	.761(-11)
2		.923(-11)	.513(-10)	.290(-10)	.257(-10)	.171(-10)	.804(-11)
3		.137(-11)	.256(-08)	.346(-10)	.244(-10)	.160(-10)	.100(-10)
4		.322(-12)	.155(-10)	.630(-10)	.247(-10)	.211(-10)	.144(-10)
5		.121(-12)	.188(-11)	.209(-08)	.307(-10)	.279(-10)	.148(-10)
6			.425(-12)	.194(-10)	.749(-10)	.310(-10)	.197(-10)
7			.114(-12)	.287(-11)	.218(-08)	.413(-10)	.219(-10)
8			.392(-13)	.654(-12)	.261(-10)	.931(-10)	.252(-10)
9			.454(-13)	.300(-12)	.447(-11)	.287(-08)	.451(-10)
10				.450(-13)	.207(-11)	.441(-10)	.106(-09)
11				.585(-13)	.445(-12)	.678(-11)	.282(-08)
12				.976(-13)	.881(-13)	.377(-11)	.607(-10)
13					.648(-13)	.568(-12)	.123(-10)
14						.132(-12)	.226(-11)

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Table 25 H + H_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.302(-10)	.270(-10)	.218(-10)	.195(-10)	.143(-10)	.636(-11)
1		.593(-10)	.274(-10)	.242(-10)	.147(-10)	.131(-10)	.774(-11)
2		.267(-08)	.327(-10)	.239(-10)	.133(-10)	.160(-10)	.728(-11)
3		.206(-10)	.764(-10)	.316(-10)	.170(-10)	.156(-10)	.830(-11)
4		.338(-11)	.222(-08)	.380(-10)	.228(-10)	.199(-10)	.131(-10)
5		.855(-12)	.320(-10)	.937(-10)	.297(-10)	.220(-10)	.158(-10)
6		.821(-13)	.426(-11)	.172(-08)	.464(-10)	.323(-10)	.176(-10)
7		.682(-13)	.128(-11)	.407(-10)	.955(-10)	.425(-10)	.223(-10)
8		.904(-13)	.586(-12)	.798(-11)	.120(-08)	.996(-10)	.284(-10)
9			.103(-12)	.166(-11)	.434(-10)	.280(-08)	.453(-10)
10			.450(-13)	.822(-12)	.128(-10)	.560(-10)	.105(-09)
11				.419(-12)	.475(-11)	.130(-10)	.283(-08)
12				.193(-12)	.905(-12)	.372(-11)	.531(-10)
13				.442(-13)	.782(-12)	.107(-11)	.130(-10)
14				.415(-13)	.244(-12)	.379(-12)	.284(-11)

Table 26 H + H_2 LSTH REACTIVE T_{tr}= 300. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.329(-13)	.248(-11)	.592(-11)	.587(-11)	.453(-11)	.156(-11)
1		.118(-12)	.289(-11)	.814(-11)	.762(-11)	.471(-11)	.339(-11)
2			.638(-11)	.110(-10)	.957(-11)	.708(-11)	.409(-11)
3			.560(-11)	.177(-10)	.140(-10)	.107(-10)	.579(-11)
4				.327(-10)	.244(-10)	.160(-10)	.858(-11)
5				.289(-10)	.396(-10)	.228(-10)	.131(-10)
6					.685(-10)	.397(-10)	.214(-10)
7					.592(-10)	.648(-10)	.292(-10)
8					.285(-13)	.112(-09)	.551(-10)
9						.997(-10)	.964(-10)
10						.887(-13)	.184(-09)
11							.168(-09)
12							.958(-12)

Table 27 H + H_2 LSTH REACTIVE T_{tr}= 300. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.482(-13)	.201(-11)	.486(-11)	.675(-11)	.496(-11)	.219(-11)
1		.764(-13)	.215(-11)	.641(-11)	.678(-11)	.487(-11)	.377(-11)
2			.534(-11)	.947(-11)	.945(-11)	.726(-11)	.391(-11)
3			.466(-11)	.157(-10)	.145(-10)	.100(-10)	.640(-11)
4			.571(-14)	.274(-10)	.227(-10)	.155(-10)	.923(-11)
5				.248(-10)	.335(-10)	.240(-10)	.131(-10)
6				.155(-13)	.620(-10)	.319(-10)	.193(-10)
7					.536(-10)	.633(-10)	.321(-10)
8					.172(-12)	.106(-09)	.564(-10)
9						.100(-09)	.913(-10)
10						.770(-12)	.181(-09)
11							.166(-09)
12							.591(-11)
13							.883(-13)

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Table 28 H + H_2 LSTH REACTIVE T_{tr}= 300. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.209(-13)	.155(-11)	.408(-11)	.561(-11)	.498(-11)	.167(-11)
1		.530(-13)	.162(-11)	.546(-11)	.718(-11)	.568(-11)	.344(-11)
2			.331(-11)	.812(-11)	.849(-11)	.855(-11)	.342(-11)
3			.347(-11)	.120(-10)	.130(-10)	.793(-11)	.795(-11)
4			.262(-13)	.201(-10)	.213(-10)	.134(-10)	.810(-11)
5				.215(-10)	.294(-10)	.201(-10)	.156(-10)
6				.535(-12)	.534(-10)	.304(-10)	.211(-10)
7				.141(-13)	.542(-10)	.575(-10)	.351(-10)
8					.258(-11)	.885(-10)	.471(-10)
9						.115(-09)	.879(-10)
10						.835(-11)	.177(-09)
11						.185(-12)	.194(-09)
12							.279(-10)
13							.972(-12)
14							.496(-13)

Table 29 H + H_2 LSTH REACTIVE T_{tr}= 300. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.191(-13)	.927(-12)	.459(-11)	.554(-11)	.318(-11)	.930(-12)
1		.517(-13)	.123(-11)	.483(-11)	.589(-11)	.584(-11)	.260(-11)
2			.255(-11)	.616(-11)	.866(-11)	.750(-11)	.281(-11)
3			.265(-11)	.907(-11)	.131(-10)	.782(-11)	.668(-11)
4			.492(-12)	.171(-10)	.173(-10)	.135(-10)	.476(-11)
5			.212(-13)	.227(-10)	.242(-10)	.179(-10)	.132(-10)
6			.200(-13)	.472(-11)	.436(-10)	.327(-10)	.149(-10)
7				.357(-12)	.653(-10)	.496(-10)	.260(-10)
8				.212(-12)	.153(-10)	.858(-10)	.436(-10)
9					.250(-11)	.122(-09)	.851(-10)
10					.310(-12)	.417(-10)	.168(-09)
11						.533(-11)	.227(-09)
12						.661(-13)	.778(-10)
13							.876(-11)
14							.220(-12)

Table 30 H + H_2 LSTH REACTIVE T_{tr}= 300. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.536(-13)	.115(-11)	.435(-11)	.539(-11)	.309(-11)	.936(-12)
1		.858(-13)	.124(-11)	.370(-11)	.498(-11)	.469(-11)	.143(-11)
2		.965(-13)	.168(-11)	.591(-11)	.716(-11)	.547(-11)	.262(-11)
3		.138(-12)	.340(-11)	.891(-11)	.117(-10)	.761(-11)	.339(-11)
4		.902(-14)	.231(-11)	.146(-10)	.150(-10)	.130(-10)	.635(-11)
5			.112(-11)	.249(-10)	.235(-10)	.183(-10)	.795(-11)
6			.273(-12)	.166(-10)	.430(-10)	.284(-10)	.158(-10)
7				.539(-11)	.673(-10)	.481(-10)	.233(-10)
8				.127(-11)	.367(-10)	.835(-10)	.419(-10)
9				.111(-12)	.143(-10)	.125(-09)	.737(-10)
10					.198(-11)	.666(-10)	.157(-09)
11					.271(-13)	.162(-10)	.230(-09)
12						.314(-12)	.117(-09)
13							.104(-10)
14							.229(-12)

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Table 31 H + H_2 LSTH REACTIVE T_{tr}= 500. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.712(-12)	.672(-11)	.983(-11)	.102(-10)	.673(-11)	.271(-11)
1		.842(-12)	.952(-11)	.129(-10)	.119(-10)	.866(-11)	.447(-11)
2			.169(-10)	.206(-10)	.153(-10)	.117(-10)	.577(-11)
3			.173(-10)	.357(-10)	.261(-10)	.184(-10)	.791(-11)
4				.616(-10)	.391(-10)	.270(-10)	.145(-10)
5				.507(-10)	.649(-10)	.383(-10)	.225(-10)
6				.618(-13)	.110(-09)	.661(-10)	.274(-10)
7					.853(-10)	.988(-10)	.511(-10)
8					.119(-12)	.166(-09)	.874(-10)
9						.116(-09)	.139(-09)
10						.420(-12)	.257(-09)
11							.186(-09)
12							.341(-11)
13							.208(-13)

Table 32 H + H_2 LSTH REACTIVE T_{tr}= 500. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.684(-12)	.568(-11)	.993(-11)	.109(-10)	.726(-11)	.359(-11)
1		.992(-12)	.775(-11)	.119(-10)	.115(-10)	.710(-11)	.527(-11)
2			.148(-10)	.181(-10)	.174(-10)	.109(-10)	.586(-11)
3			.150(-10)	.305(-10)	.234(-10)	.150(-10)	.966(-11)
4			.670(-14)	.529(-10)	.418(-10)	.243(-10)	.129(-10)
5				.473(-10)	.581(-10)	.364(-10)	.211(-10)
6				.984(-13)	.100(-09)	.575(-10)	.329(-10)
7					.847(-10)	.941(-10)	.500(-10)
8					.535(-12)	.162(-09)	.865(-10)
9						.126(-09)	.144(-09)
10						.208(-11)	.240(-09)
11							.199(-09)
12							.111(-10)
13							.360(-12)

Table 33 H + H_2 LSTH REACTIVE T_{tr}= 500. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.419(-12)	.503(-11)	.917(-11)	.855(-11)	.620(-11)	.348(-11)
1		.613(-12)	.668(-11)	.994(-11)	.909(-11)	.785(-11)	.327(-11)
2			.111(-10)	.156(-10)	.133(-10)	.967(-11)	.524(-11)
3			.123(-10)	.248(-10)	.230(-10)	.201(-10)	.100(-10)
4			.249(-12)	.437(-10)	.344(-10)	.249(-10)	.124(-10)
5				.431(-10)	.532(-10)	.355(-10)	.241(-10)
6				.767(-12)	.923(-10)	.593(-10)	.262(-10)
7					.877(-10)	.889(-10)	.487(-10)
8					.387(-11)	.141(-09)	.845(-10)
9						.136(-09)	.137(-09)
10						.116(-10)	.247(-09)
11						.124(-12)	.237(-09)
12							.406(-10)
13							.387(-11)
14							.627(-13)

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Table 34 H + H_2 LSTH REACTIVE T_{tr}= 500. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.405(-12)	.386(-11)	.793(-11)	.932(-11)	.600(-11)	.217(-11)
1		.664(-12)	.455(-11)	.110(-10)	.996(-11)	.766(-11)	.416(-11)
2			.760(-11)	.129(-10)	.120(-10)	.105(-10)	.615(-11)
3			.118(-10)	.211(-10)	.206(-10)	.145(-10)	.672(-11)
4			.177(-11)	.390(-10)	.312(-10)	.221(-10)	.116(-10)
5			.447(-13)	.470(-10)	.482(-10)	.351(-10)	.159(-10)
6				.920(-11)	.815(-10)	.490(-10)	.275(-10)
7				.103(-11)	.968(-10)	.812(-10)	.450(-10)
8				.274(-13)	.210(-10)	.139(-09)	.858(-10)
9					.435(-11)	.159(-09)	.136(-09)
10					.400(-12)	.458(-10)	.223(-09)
11						.885(-11)	.254(-09)
12						.127(-12)	.907(-10)
13						.201(-13)	.962(-11)
14							.570(-12)

Table 35 H + H_2 LSTH REACTIVE T_{tr}= 500. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.525(-12)	.317(-11)	.727(-11)	.760(-11)	.477(-11)	.203(-11)
1		.939(-12)	.392(-11)	.831(-11)	.917(-11)	.524(-11)	.394(-11)
2		.492(-12)	.691(-11)	.112(-10)	.110(-10)	.776(-11)	.330(-11)
3		.261(-12)	.133(-10)	.170(-10)	.165(-10)	.116(-10)	.636(-11)
4		.233(-13)	.745(-11)	.315(-10)	.249(-10)	.181(-10)	.108(-10)
5			.180(-11)	.571(-10)	.432(-10)	.309(-10)	.172(-10)
6			.302(-12)	.252(-10)	.764(-10)	.441(-10)	.240(-10)
7			.103(-12)	.708(-11)	.107(-09)	.776(-10)	.420(-10)
8				.182(-11)	.506(-10)	.133(-09)	.758(-10)
9				.343(-13)	.190(-10)	.164(-09)	.123(-09)
10					.412(-11)	.851(-10)	.215(-09)
11					.155(-12)	.244(-10)	.249(-09)
12						.827(-12)	.136(-09)
13						.321(-13)	.146(-10)
14							.128(-11)

Table 36 H + H_2 LSTH REACTIVE T_{tr}=1000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.572(-11)	.175(-10)	.191(-10)	.161(-10)	.137(-10)	.532(-11)
1		.108(-10)	.263(-10)	.274(-10)	.196(-10)	.158(-10)	.100(-10)
2		.139(-12)	.530(-10)	.409(-10)	.318(-10)	.227(-10)	.128(-10)
3			.443(-10)	.654(-10)	.481(-10)	.333(-10)	.181(-10)
4			.312(-12)	.118(-09)	.761(-10)	.464(-10)	.293(-10)
5				.878(-10)	.123(-09)	.717(-10)	.408(-10)
6				.684(-12)	.174(-09)	.112(-09)	.692(-10)
7				.153(-13)	.111(-09)	.166(-09)	.977(-10)
8					.219(-11)	.233(-09)	.155(-09)
9						.143(-09)	.231(-09)
10						.471(-11)	.308(-09)
11						.195(-12)	.197(-09)
12							.168(-10)
13							.131(-11)
14							.208(-12)

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Table 37 H + H_2 LSTH REACTIVE T_{tr}=1000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.530(-11)	.170(-10)	.223(-10)	.149(-10)	.126(-10)	.666(-11)
1		.104(-10)	.243(-10)	.245(-10)	.199(-10)	.151(-10)	.794(-11)
2		.122(-12)	.471(-10)	.381(-10)	.290(-10)	.207(-10)	.101(-10)
3			.436(-10)	.616(-10)	.455(-10)	.354(-10)	.211(-10)
4			.548(-12)	.112(-09)	.755(-10)	.468(-10)	.295(-10)
5				.819(-10)	.115(-09)	.683(-10)	.375(-10)
6				.131(-11)	.168(-09)	.103(-09)	.694(-10)
7				.153(-13)	.115(-09)	.159(-09)	.875(-10)
8					.272(-11)	.225(-09)	.155(-09)
9					.459(-13)	.149(-09)	.238(-09)
10						.831(-11)	.296(-09)
11						.221(-12)	.208(-09)
12							.221(-10)
13							.179(-11)
14							.302(-12)

Table 38 H + H_2 LSTH REACTIVE T_{tr}=1000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.472(-11)	.152(-10)	.190(-10)	.152(-10)	.130(-10)	.551(-11)
1		.852(-11)	.186(-10)	.226(-10)	.219(-10)	.131(-10)	.762(-11)
2		.248(-12)	.400(-10)	.312(-10)	.270(-10)	.190(-10)	.129(-10)
3			.408(-10)	.567(-10)	.411(-10)	.291(-10)	.164(-10)
4			.123(-11)	.970(-10)	.642(-10)	.466(-10)	.233(-10)
5				.846(-10)	.102(-09)	.629(-10)	.418(-10)
6				.342(-11)	.153(-09)	.103(-09)	.623(-10)
7				.887(-13)	.131(-09)	.155(-09)	.846(-10)
8					.760(-11)	.198(-09)	.144(-09)
9					.295(-12)	.177(-09)	.221(-09)
10						.204(-10)	.290(-09)
11						.197(-11)	.250(-09)
12						.792(-13)	.514(-10)
13						.930(-14)	.752(-11)
14							.371(-12)

Table 39 H + H_2 LSTH REACTIVE T_{tr}=1000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.395(-11)	.104(-10)	.153(-10)	.151(-10)	.906(-11)	.544(-11)
1		.826(-11)	.157(-10)	.204(-10)	.203(-10)	.112(-10)	.661(-11)
2		.824(-12)	.342(-10)	.281(-10)	.294(-10)	.208(-10)	.690(-11)
3		.109(-13)	.418(-10)	.514(-10)	.443(-10)	.292(-10)	.126(-10)
4			.583(-11)	.934(-10)	.611(-10)	.364(-10)	.242(-10)
5			.192(-12)	.908(-10)	.952(-10)	.647(-10)	.340(-10)
6				.176(-10)	.148(-09)	.989(-10)	.548(-10)
7				.133(-11)	.146(-09)	.148(-09)	.835(-10)
8				.122(-13)	.313(-10)	.206(-09)	.135(-09)
9					.318(-11)	.191(-09)	.205(-09)
10					.198(-11)	.577(-10)	.299(-09)
11					.289(-12)	.109(-10)	.272(-09)
12						.140(-11)	.102(-09)
13						.529(-13)	.198(-10)
14							.214(-11)

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Table 40 H + H_2 LSTH REACTIVE T_{tr}=1000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.433(-11)	.106(-10)	.171(-10)	.121(-10)	.100(-10)	.416(-11)
1		.931(-11)	.142(-10)	.169(-10)	.164(-10)	.136(-10)	.704(-11)
2		.319(-11)	.285(-10)	.276(-10)	.209(-10)	.149(-10)	.723(-11)
3		.761(-12)	.465(-10)	.414(-10)	.340(-10)	.216(-10)	.138(-10)
4			.190(-10)	.799(-10)	.537(-10)	.378(-10)	.237(-10)
5			.484(-11)	.995(-10)	.853(-10)	.569(-10)	.334(-10)
6			.133(-11)	.393(-10)	.141(-09)	.915(-10)	.494(-10)
7			.174(-12)	.118(-10)	.150(-09)	.139(-09)	.861(-10)
8				.175(-11)	.755(-10)	.196(-09)	.139(-09)
9				.163(-12)	.330(-10)	.218(-09)	.199(-09)
10				.333(-13)	.494(-11)	.102(-09)	.281(-09)
11					.773(-12)	.277(-10)	.274(-09)
12					.491(-13)	.297(-11)	.133(-09)
13						.424(-12)	.224(-10)
14							.313(-11)

Table 41 H + H_2 LSTH REACTIVE T_{tr}=2000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.307(-10)	.400(-10)	.371(-10)	.334(-10)	.246(-10)	.135(-10)
1		.382(-10)	.636(-10)	.537(-10)	.442(-10)	.322(-10)	.187(-10)
2		.145(-11)	.109(-09)	.808(-10)	.564(-10)	.423(-10)	.249(-10)
3		.114(-12)	.846(-10)	.124(-09)	.925(-10)	.637(-10)	.368(-10)
4		.188(-13)	.315(-11)	.183(-09)	.132(-09)	.904(-10)	.582(-10)
5			.149(-12)	.111(-09)	.182(-09)	.128(-09)	.794(-10)
6			.218(-13)	.706(-11)	.224(-09)	.189(-09)	.119(-09)
7				.339(-12)	.132(-09)	.230(-09)	.168(-09)
8				.249(-13)	.113(-10)	.260(-09)	.222(-09)
9				.000(-00)	.112(-11)	.163(-09)	.285(-09)
10				.849(-14)	.114(-12)	.220(-10)	.316(-09)
11					.110(-13)	.338(-11)	.193(-09)
12					.260(-13)	.403(-12)	.363(-10)
13						.180(-12)	.575(-11)
14							.665(-12)

Table 42 H + H_2 LSTH REACTIVE T_{tr}=2000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.297(-10)	.375(-10)	.373(-10)	.337(-10)	.230(-10)	.116(-10)
1		.365(-10)	.609(-10)	.530(-10)	.393(-10)	.306(-10)	.201(-10)
2		.174(-11)	.104(-09)	.770(-10)	.540(-10)	.402(-10)	.234(-10)
3		.119(-12)	.837(-10)	.116(-09)	.890(-10)	.609(-10)	.365(-10)
4		.100(-13)	.360(-11)	.174(-09)	.128(-09)	.860(-10)	.567(-10)
5			.172(-12)	.114(-09)	.176(-09)	.128(-09)	.844(-10)
6			.936(-14)	.789(-11)	.223(-09)	.185(-09)	.110(-09)
7				.478(-12)	.132(-09)	.227(-09)	.155(-09)
8				.615(-13)	.131(-10)	.259(-09)	.227(-09)
9				.880(-14)	.116(-11)	.172(-09)	.295(-09)
10					.113(-12)	.250(-10)	.309(-09)
11					.279(-13)	.291(-11)	.206(-09)
12					.260(-13)	.453(-12)	.449(-10)
13						.354(-12)	.662(-11)
14							.991(-12)

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Table 43 H + H_2 LSTH REACTIVE T_{tr}=2000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.267(-10)	.319(-10)	.354(-10)	.320(-10)	.196(-10)	.111(-10)
1		.361(-10)	.552(-10)	.492(-10)	.371(-10)	.259(-10)	.144(-10)
2		.250(-11)	.100(-09)	.693(-10)	.551(-10)	.395(-10)	.234(-10)
3		.133(-12)	.808(-10)	.107(-09)	.789(-10)	.551(-10)	.359(-10)
4			.553(-11)	.158(-09)	.128(-09)	.820(-10)	.491(-10)
5			.305(-12)	.120(-09)	.167(-09)	.124(-09)	.727(-10)
6			.419(-13)	.118(-10)	.204(-09)	.170(-09)	.106(-09)
7				.798(-12)	.154(-09)	.234(-09)	.147(-09)
8				.619(-13)	.205(-10)	.268(-09)	.209(-09)
9				.880(-14)	.210(-11)	.181(-09)	.261(-09)
10					.249(-12)	.379(-10)	.309(-09)
11					.564(-13)	.652(-11)	.219(-09)
12					.496(-13)	.102(-11)	.641(-10)
13						.271(-12)	.152(-10)
14							.126(-11)

Table 44 H + H_2 LSTH REACTIVE T_{tr}=2000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.237(-10)	.279(-10)	.334(-10)	.286(-10)	.211(-10)	.973(-11)
1		.403(-10)	.465(-10)	.436(-10)	.339(-10)	.272(-10)	.126(-10)
2		.433(-11)	.853(-10)	.633(-10)	.510(-10)	.374(-10)	.217(-10)
3		.265(-12)	.912(-10)	.102(-09)	.759(-10)	.572(-10)	.332(-10)
4		.888(-14)	.136(-10)	.162(-09)	.114(-09)	.775(-10)	.446(-10)
5			.131(-11)	.132(-09)	.163(-09)	.117(-09)	.645(-10)
6			.112(-12)	.252(-10)	.209(-09)	.159(-09)	.963(-10)
7			.191(-13)	.320(-11)	.166(-09)	.225(-09)	.142(-09)
8				.273(-12)	.492(-10)	.271(-09)	.199(-09)
9				.197(-12)	.922(-11)	.196(-09)	.257(-09)
10					.150(-11)	.728(-10)	.299(-09)
11					.242(-12)	.202(-10)	.259(-09)
12					.554(-13)	.424(-11)	.900(-10)
13					.167(-13)	.935(-12)	.242(-10)
14						.729(-13)	.275(-11)

Table 45 H + H_2 LSTH REACTIVE T_{tr}=2000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.246(-10)	.290(-10)	.297(-10)	.246(-10)	.153(-10)	.715(-11)
1		.422(-10)	.443(-10)	.362(-10)	.330(-10)	.215(-10)	.130(-10)
2		.141(-10)	.774(-10)	.600(-10)	.480(-10)	.338(-10)	.222(-10)
3		.258(-11)	.954(-10)	.942(-10)	.707(-10)	.562(-10)	.297(-10)
4		.646(-12)	.314(-10)	.146(-09)	.995(-10)	.774(-10)	.448(-10)
5		.659(-13)	.927(-11)	.145(-09)	.160(-09)	.115(-09)	.661(-10)
6		.000(-00)	.157(-11)	.675(-10)	.195(-09)	.153(-09)	.938(-10)
7		.163(-13)	.688(-12)	.208(-10)	.192(-09)	.211(-09)	.135(-09)
8		.866(-14)	.877(-13)	.517(-11)	.891(-10)	.260(-09)	.196(-09)
9				.884(-12)	.314(-10)	.238(-09)	.247(-09)
10				.213(-12)	.847(-11)	.112(-09)	.282(-09)
11				.126(-12)	.218(-11)	.327(-10)	.265(-09)
12					.496(-12)	.778(-11)	.124(-09)
13					.356(-13)	.193(-11)	.265(-10)
14						.280(-12)	.457(-11)

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Table 46 H + H_2 LSTH REACTIVE T_{tr}=4000. T_{rot}= 300.						
v'	v 1	3	5	7	9	11
0	.857(-10)	.791(-10)	.707(-10)	.535(-10)	.513(-10)	.267(-10)
1	.135(-09)	.111(-09)	.901(-10)	.754(-10)	.535(-10)	.345(-10)
2	.963(-10)	.159(-09)	.140(-09)	.110(-09)	.818(-10)	.505(-10)
3	.147(-10)	.202(-09)	.177(-09)	.147(-09)	.109(-09)	.730(-10)
4	.297(-11)	.113(-09)	.218(-09)	.185(-09)	.160(-09)	.911(-10)
5	.414(-12)	.206(-10)	.238(-09)	.230(-09)	.205(-09)	.114(-09)
6	.478(-13)	.449(-11)	.126(-09)	.248(-09)	.263(-09)	.154(-09)
7	.000(-00)	.112(-11)	.301(-10)	.238(-09)	.241(-09)	.241(-09)
8	.248(-13)	.185(-12)	.552(-11)	.136(-09)	.242(-09)	.248(-09)
9		.909(-13)	.141(-11)	.356(-10)	.155(-09)	.252(-09)
10		.306(-13)	.646(-12)	.107(-10)	.424(-10)	.238(-09)
11			.257(-12)	.328(-11)	.133(-10)	.187(-09)
12			.252(-12)	.101(-11)	.426(-11)	.475(-10)
13					.135(-11)	.196(-10)
14					.547(-12)	.182(-11)

Table 47 H + H_2 LSTH REACTIVE T_{tr}=4000. T_{rot}= 500.						
v'	v 1	3	5	7	9	11
0	.825(-10)	.741(-10)	.701(-10)	.535(-10)	.416(-10)	.264(-10)
1	.133(-09)	.107(-09)	.883(-10)	.765(-10)	.537(-10)	.361(-10)
2	.918(-10)	.152(-09)	.136(-09)	.105(-09)	.768(-10)	.481(-10)
3	.138(-10)	.198(-09)	.176(-09)	.148(-09)	.122(-09)	.732(-10)
4	.347(-11)	.116(-09)	.220(-09)	.187(-09)	.161(-09)	.861(-10)
5	.455(-12)	.201(-10)	.236(-09)	.233(-09)	.193(-09)	.122(-09)
6	.428(-13)	.364(-11)	.141(-09)	.228(-09)	.250(-09)	.144(-09)
7	.000(-00)	.126(-11)	.324(-10)	.236(-09)	.240(-09)	.213(-09)
8	.124(-13)	.144(-12)	.643(-11)	.145(-09)	.236(-09)	.237(-09)
9		.909(-13)	.153(-11)	.389(-10)	.172(-09)	.250(-09)
10		.306(-13)	.655(-12)	.110(-10)	.504(-10)	.251(-09)
11		.277(-13)	.228(-12)	.343(-11)	.146(-10)	.184(-09)
12			.133(-12)	.118(-11)	.475(-11)	.580(-10)
13				.281(-12)	.137(-11)	.170(-10)
14					.667(-12)	.176(-11)

Table 48 H + H_2 LSTH REACTIVE T_{tr}=4000. T_{rot}=1000.						
v'	v 1	3	5	7	9	11
0	.806(-10)	.695(-10)	.725(-10)	.496(-10)	.422(-10)	.208(-10)
1	.129(-09)	.107(-09)	.753(-10)	.712(-10)	.577(-10)	.308(-10)
2	.984(-10)	.151(-09)	.129(-09)	.100(-09)	.721(-10)	.461(-10)
3	.155(-10)	.196(-09)	.153(-09)	.144(-09)	.104(-09)	.611(-10)
4	.291(-11)	.116(-09)	.219(-09)	.179(-09)	.148(-09)	.835(-10)
5	.667(-12)	.249(-10)	.214(-09)	.209(-09)	.199(-09)	.125(-09)
6	.159(-12)	.505(-11)	.157(-09)	.252(-09)	.239(-09)	.138(-09)
7		.991(-12)	.424(-10)	.258(-09)	.255(-09)	.183(-09)
8		.256(-12)	.894(-11)	.161(-09)	.244(-09)	.231(-09)
9		.147(-12)	.274(-11)	.478(-10)	.177(-09)	.244(-09)
10		.000(-00)	.721(-12)	.119(-10)	.535(-10)	.252(-09)
11		.261(-13)	.260(-12)	.399(-11)	.164(-10)	.178(-09)
12			.435(-13)	.176(-11)	.626(-11)	.650(-10)
13				.294(-12)	.219(-11)	.224(-10)
14					.394(-12)	.228(-11)

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Table 49 H + H_2 LSTH REACTIVE T_{tr}=4000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.810(-10)	.687(-10)	.606(-10)	.554(-10)	.344(-10)	.208(-10)
1		.912(-10)	.112(-09)	.942(-10)	.677(-10)	.493(-10)	.332(-10)
2		.183(-10)	.151(-09)	.134(-09)	.108(-09)	.743(-10)	.438(-10)
3		.273(-11)	.127(-09)	.176(-09)	.149(-09)	.104(-09)	.599(-10)
4		.724(-12)	.287(-10)	.197(-09)	.188(-09)	.143(-09)	.747(-10)
5		.937(-13)	.585(-11)	.161(-09)	.230(-09)	.183(-09)	.107(-09)
6		.218(-13)	.132(-11)	.506(-10)	.230(-09)	.220(-09)	.133(-09)
7		.209(-13)	.635(-12)	.134(-10)	.178(-09)	.240(-09)	.168(-09)
8			.592(-13)	.319(-11)	.643(-10)	.253(-09)	.231(-09)
9			.374(-13)	.897(-12)	.225(-10)	.205(-09)	.228(-09)
10			.233(-13)	.322(-12)	.597(-11)	.868(-10)	.257(-09)
11			.000(-00)	.110(-12)	.184(-11)	.332(-10)	.189(-09)
12			.134(-13)	.615(-13)	.685(-12)	.114(-10)	.822(-10)
13				.357(-13)	.111(-12)	.227(-11)	.231(-10)
14					.276(-13)	.553(-12)	.365(-11)

Table 50 H + H_2 LSTH REACTIVE T_{tr}=4000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.717(-10)	.687(-10)	.509(-10)	.436(-10)	.317(-10)	.203(-10)
1		.115(-09)	.934(-10)	.800(-10)	.582(-10)	.492(-10)	.285(-10)
2		.116(-09)	.135(-09)	.116(-09)	.912(-10)	.703(-10)	.438(-10)
3		.462(-10)	.183(-09)	.152(-09)	.122(-09)	.948(-10)	.558(-10)
4		.130(-10)	.151(-09)	.198(-09)	.156(-09)	.122(-09)	.699(-10)
5		.396(-11)	.655(-10)	.215(-09)	.208(-09)	.168(-09)	.925(-10)
6		.105(-11)	.238(-10)	.186(-09)	.232(-09)	.214(-09)	.122(-09)
7		.547(-12)	.915(-11)	.835(-10)	.248(-09)	.243(-09)	.161(-09)
8		.612(-13)	.246(-11)	.324(-10)	.209(-09)	.261(-09)	.196(-09)
9		.291(-13)	.100(-11)	.125(-10)	.106(-09)	.209(-09)	.217(-09)
10		.280(-13)	.125(-12)	.507(-11)	.447(-10)	.102(-09)	.230(-09)
11		.000(-00)	.174(-12)	.159(-11)	.206(-10)	.489(-10)	.210(-09)
12		.299(-13)	.888(-13)	.693(-12)	.493(-11)	.151(-10)	.927(-10)
13			.316(-13)	.200(-12)	.121(-11)	.381(-11)	.299(-10)
14					.202(-12)	.106(-11)	.462(-11)

Table 51 H + H_2 DMBE NON REACTIVE T_{tr}= 300. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.204(-13)	.147(-11)	.438(-11)	.396(-11)	.314(-11)	.140(-11)
1		.879(-09)	.157(-11)	.397(-11)	.409(-11)	.316(-11)	.120(-11)
2			.176(-11)	.571(-11)	.575(-11)	.391(-11)	.188(-11)
3			.858(-09)	.802(-11)	.758(-11)	.491(-11)	.341(-11)
4				.737(-11)	.103(-10)	.783(-11)	.534(-11)
5				.750(-09)	.127(-10)	.112(-10)	.552(-11)
6					.170(-10)	.156(-10)	.804(-11)
7					.743(-09)	.190(-10)	.135(-10)
8					.128(-13)	.241(-10)	.164(-10)
9						.879(-09)	.214(-10)
10							.341(-10)
11							.804(-09)
12							.222(-12)

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Table 52	H + H_2 DMBE NON REACTIVE			T_{tr}= 300.	T_{rot}= 500.	
v'	v	1	3	5	7	9	11
0		.209(-13)	.103(-11)	.378(-11)	.319(-11)	.285(-11)	.223(-11)
1		.890(-09)	.111(-11)	.346(-11)	.529(-11)	.368(-11)	.116(-11)
2			.140(-11)	.512(-11)	.585(-11)	.373(-11)	.218(-11)
3			.874(-09)	.560(-11)	.544(-11)	.491(-11)	.213(-11)
4				.567(-11)	.146(-10)	.805(-11)	.764(-11)
5				.783(-09)	.157(-10)	.117(-10)	.533(-11)
6					.189(-10)	.173(-10)	.976(-11)
7					.777(-09)	.172(-10)	.122(-10)
8						.240(-10)	.150(-10)
9						.920(-09)	.186(-10)
10						.496(-13)	.289(-10)
11							.843(-09)
12							.439(-12)
13							.000(-00)
14							.188(-13)

Table 53	H + H_2 DMBE NON REACTIVE			T_{tr}= 300.	T_{rot}=1000.	
v'	v	1	3	5	7	9	11
0		.197(-13)	.803(-12)	.296(-11)	.437(-11)	.386(-11)	.211(-11)
1		.890(-09)	.821(-12)	.280(-11)	.504(-11)	.297(-11)	.179(-11)
2			.112(-11)	.384(-11)	.598(-11)	.526(-11)	.192(-11)
3			.879(-09)	.457(-11)	.482(-11)	.567(-11)	.231(-11)
4				.384(-11)	.866(-11)	.981(-11)	.650(-11)
5				.808(-09)	.113(-10)	.119(-10)	.558(-11)
6				.718(-14)	.162(-10)	.193(-10)	.102(-10)
7					.811(-09)	.136(-10)	.115(-10)
8					.148(-12)	.383(-10)	.301(-10)
9						.901(-09)	.241(-10)
10						.950(-12)	.314(-10)
11							.793(-09)
12							.457(-11)
13							.826(-13)
14							.188(-13)

Table 54	H + H_2 DMBE NON REACTIVE			T_{tr}= 300.	T_{rot}=2000.	
v'	v	1	3	5	7	9	11
0		.651(-14)	.676(-12)	.298(-11)	.338(-11)	.285(-11)	.222(-11)
1		.890(-09)	.511(-12)	.215(-11)	.287(-11)	.260(-11)	.167(-11)
2			.833(-12)	.284(-11)	.569(-11)	.525(-11)	.211(-11)
3			.882(-09)	.399(-11)	.543(-11)	.603(-11)	.167(-11)
4			.939(-13)	.410(-11)	.708(-11)	.800(-11)	.347(-11)
5			.163(-13)	.815(-09)	.915(-11)	.897(-11)	.571(-11)
6				.371(-12)	.119(-10)	.140(-10)	.501(-11)
7					.809(-09)	.150(-10)	.853(-11)
8					.134(-11)	.255(-10)	.276(-10)
9					.000(-00)	.880(-09)	.245(-10)
10					.144(-13)	.160(-10)	.297(-10)
11						.108(-12)	.761(-09)
12							.670(-11)
13							.315(-12)
14							.188(-13)

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Table 55 H + H_2 DMBE NON REACTIVE T_{tr}= 300. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.212(-12)	.629(-12)	.242(-11)	.241(-11)	.168(-11)	.103(-11)
1		.889(-09)	.790(-12)	.212(-11)	.287(-11)	.144(-11)	.104(-11)
2		.302(-13)	.252(-11)	.451(-11)	.585(-11)	.390(-11)	.229(-11)
3			.877(-09)	.365(-11)	.488(-11)	.479(-11)	.194(-11)
4			.435(-12)	.865(-11)	.538(-11)	.702(-11)	.363(-11)
5				.794(-09)	.817(-11)	.940(-11)	.454(-11)
6				.130(-11)	.200(-10)	.112(-10)	.564(-11)
7				.455(-13)	.761(-09)	.132(-10)	.780(-11)
8				.590(-13)	.240(-11)	.195(-10)	.109(-10)
9					.229(-12)	.865(-09)	.202(-10)
10					.144(-13)	.447(-11)	.301(-10)
11						.320(-12)	.748(-09)
12							.776(-11)
13							.854(-12)
14							.188(-13)

Table 56 H + H_2 DMBE NON REACTIVE T_{tr}= 500. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.312(-12)	.464(-11)	.740(-11)	.619(-11)	.334(-11)	.322(-11)
1		.111(-08)	.482(-11)	.824(-11)	.689(-11)	.505(-11)	.285(-11)
2			.444(-11)	.876(-11)	.658(-11)	.524(-11)	.302(-11)
3			.105(-08)	.136(-10)	.912(-11)	.643(-11)	.414(-11)
4				.137(-10)	.146(-10)	.111(-10)	.527(-11)
5				.914(-09)	.217(-10)	.145(-10)	.101(-10)
6				.128(-13)	.266(-10)	.200(-10)	.125(-10)
7					.890(-09)	.251(-10)	.166(-10)
8					.378(-13)	.284(-10)	.246(-10)
9						.110(-08)	.286(-10)
10						.255(-12)	.376(-10)
11							.105(-08)
12							.787(-12)
13							.186(-13)

Table 57 H + H_2 DMBE NON REACTIVE T_{tr}= 500. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.197(-12)	.392(-11)	.722(-11)	.594(-11)	.379(-11)	.168(-11)
1		.113(-08)	.368(-11)	.745(-11)	.573(-11)	.437(-11)	.269(-11)
2			.446(-11)	.847(-11)	.706(-11)	.603(-11)	.306(-11)
3			.108(-08)	.103(-10)	.893(-11)	.691(-11)	.328(-11)
4			.779(-14)	.115(-10)	.127(-10)	.100(-10)	.508(-11)
5				.930(-09)	.177(-10)	.137(-10)	.810(-11)
6				.640(-14)	.214(-10)	.192(-10)	.978(-11)
7					.914(-09)	.216(-10)	.147(-10)
8					.108(-12)	.260(-10)	.166(-10)
9						.109(-08)	.242(-10)
10						.258(-12)	.389(-10)
11							.101(-08)
12							.197(-11)
13							.000(-00)
14							.146(-13)

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Table 58 H + H_2 DMBE NON REACTIVE T_{tr}= 500. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.155(-12)	.308(-11)	.560(-11)	.604(-11)	.448(-11)	.260(-11)
1		.114(-08)	.337(-11)	.676(-11)	.625(-11)	.236(-11)	.205(-11)
2			.348(-11)	.818(-11)	.614(-11)	.449(-11)	.331(-11)
3			.107(-08)	.958(-11)	.925(-11)	.560(-11)	.401(-11)
4			.360(-13)	.135(-10)	.117(-10)	.125(-10)	.550(-11)
5				.972(-09)	.162(-10)	.150(-10)	.863(-11)
6				.495(-13)	.197(-10)	.162(-10)	.105(-10)
7					.955(-09)	.174(-10)	.130(-10)
8					.676(-12)	.257(-10)	.163(-10)
9						.113(-08)	.276(-10)
10						.922(-12)	.352(-10)
11						.678(-13)	.101(-08)
12							.520(-11)
13							.187(-12)

Table 59 H + H_2 DMBE NON REACTIVE T_{tr}= 500. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.154(-12)	.236(-11)	.504(-11)	.452(-11)	.420(-11)	.144(-11)
1		.114(-08)	.191(-11)	.543(-11)	.454(-11)	.508(-11)	.215(-11)
2			.331(-11)	.804(-11)	.717(-11)	.510(-11)	.389(-11)
3			.111(-08)	.754(-11)	.767(-11)	.606(-11)	.261(-11)
4			.837(-13)	.111(-10)	.103(-10)	.150(-10)	.481(-11)
5				.985(-09)	.150(-10)	.992(-11)	.603(-11)
6				.964(-12)	.222(-10)	.149(-10)	.140(-10)
7					.954(-09)	.222(-10)	.109(-10)
8					.193(-11)	.279(-10)	.198(-10)
9					.992(-13)	.108(-08)	.286(-10)
10						.384(-11)	.358(-10)
11						.330(-12)	.967(-09)
12						.463(-13)	.794(-11)
13							.638(-12)
14							.185(-12)

Table 60 H + H_2 DMBE NON REACTIVE T_{tr}= 500. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.790(-12)	.209(-11)	.403(-11)	.633(-11)	.446(-11)	.840(-12)
1		.114(-08)	.186(-11)	.459(-11)	.715(-11)	.307(-11)	.142(-11)
2		.257(-12)	.675(-11)	.827(-11)	.554(-11)	.439(-11)	.232(-11)
3			.110(-08)	.632(-11)	.618(-11)	.810(-11)	.214(-11)
4			.145(-11)	.159(-10)	.880(-11)	.914(-11)	.446(-11)
5			.146(-12)	.952(-09)	.127(-10)	.968(-11)	.563(-11)
6				.457(-11)	.287(-10)	.119(-10)	.141(-10)
7				.180(-12)	.898(-09)	.195(-10)	.116(-10)
8				.114(-12)	.444(-11)	.391(-10)	.177(-10)
9				.161(-13)	.659(-12)	.104(-08)	.223(-10)
10					.000(-00)	.548(-11)	.321(-10)
11					.576(-13)	.420(-12)	.940(-09)
12						.271(-13)	.119(-10)
13							.127(-11)
14							.765(-13)

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Table 61 H + H_2 DMBE NON REACTIVE T_{tr}=1000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.345(-11)	.108(-10)	.117(-10)	.103(-10)	.650(-11)	.245(-11)
1		.156(-08)	.107(-10)	.144(-10)	.122(-10)	.756(-11)	.340(-11)
2			.129(-10)	.169(-10)	.114(-10)	.651(-11)	.469(-11)
3			.141(-08)	.178(-10)	.141(-10)	.899(-11)	.228(-11)
4			.603(-13)	.193(-10)	.184(-10)	.130(-10)	.662(-11)
5				.114(-08)	.224(-10)	.197(-10)	.752(-11)
6				.215(-12)	.340(-10)	.199(-10)	.121(-10)
7					.848(-09)	.276(-10)	.168(-10)
8					.954(-12)	.289(-10)	.235(-10)
9					.189(-13)	.111(-08)	.331(-10)
10						.222(-11)	.404(-10)
11						.855(-13)	.143(-08)
12							.487(-11)
13							.432(-12)
14							.329(-13)

Table 62 H + H_2 DMBE NON REACTIVE T_{tr}=1000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.340(-11)	.101(-10)	.106(-10)	.108(-10)	.610(-11)	.232(-11)
1		.156(-08)	.882(-11)	.135(-10)	.124(-10)	.789(-11)	.369(-11)
2		.240(-13)	.112(-10)	.145(-10)	.121(-10)	.739(-11)	.397(-11)
3			.142(-08)	.157(-10)	.138(-10)	.793(-11)	.288(-11)
4			.471(-13)	.184(-10)	.165(-10)	.161(-10)	.821(-11)
5				.117(-08)	.193(-10)	.172(-10)	.846(-11)
6				.241(-12)	.338(-10)	.187(-10)	.112(-10)
7					.877(-09)	.266(-10)	.165(-10)
8					.733(-12)	.312(-10)	.197(-10)
9						.112(-08)	.298(-10)
10						.191(-11)	.453(-10)
11						.143(-12)	.142(-08)
12							.778(-11)
13							.296(-12)
14							.150(-12)

Table 63 H + H_2 DMBE NON REACTIVE T_{tr}=1000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.229(-11)	.898(-11)	.994(-11)	.870(-11)	.627(-11)	.224(-11)
1		.156(-08)	.860(-11)	.109(-10)	.981(-11)	.675(-11)	.260(-11)
2		.427(-13)	.109(-10)	.117(-10)	.127(-10)	.699(-11)	.377(-11)
3			.144(-08)	.139(-10)	.118(-10)	.135(-10)	.432(-11)
4			.164(-12)	.161(-10)	.161(-10)	.124(-10)	.824(-11)
5				.121(-08)	.226(-10)	.132(-10)	.900(-11)
6				.709(-12)	.312(-10)	.195(-10)	.130(-10)
7					.908(-09)	.222(-10)	.143(-10)
8					.157(-11)	.371(-10)	.193(-10)
9					.754(-13)	.113(-08)	.279(-10)
10						.337(-11)	.461(-10)
11						.107(-12)	.138(-08)
12							.115(-10)
13							.198(-11)
14							.273(-12)

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Table 64 H + H_2 DMBE NON REACTIVE T_{tr}=1000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.276(-11)	.745(-11)	.110(-10)	.810(-11)	.740(-11)	.194(-11)
1		.156(-08)	.730(-11)	.872(-11)	.838(-11)	.648(-11)	.130(-11)
2		.176(-12)	.124(-10)	.122(-10)	.114(-10)	.677(-11)	.300(-11)
3			.145(-08)	.139(-10)	.141(-10)	.113(-10)	.620(-11)
4			.119(-11)	.202(-10)	.147(-10)	.119(-10)	.731(-11)
5				.122(-08)	.212(-10)	.110(-10)	.858(-11)
6				.191(-11)	.304(-10)	.223(-10)	.999(-11)
7				.466(-13)	.117(-08)	.179(-10)	.137(-10)
8					.307(-11)	.398(-10)	.171(-10)
9					.232(-12)	.142(-08)	.196(-10)
10					.000(-00)	.963(-11)	.579(-10)
11					.000(-00)	.140(-11)	.132(-08)
12					.588(-13)	.311(-13)	.254(-10)
13						.000(-00)	.280(-11)
14						.263(-13)	.389(-12)

Table 65 H + H_2 DMBE NON REACTIVE T_{tr}=1000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.432(-11)	.597(-11)	.722(-11)	.882(-11)	.422(-11)	.293(-11)
1		.156(-08)	.611(-11)	.110(-10)	.696(-11)	.408(-11)	.998(-12)
2		.950(-12)	.150(-10)	.804(-11)	.989(-11)	.723(-11)	.404(-11)
3		.000(-00)	.143(-08)	.130(-10)	.109(-10)	.943(-11)	.740(-11)
4		.333(-13)	.410(-11)	.261(-10)	.169(-10)	.908(-11)	.621(-11)
5			.452(-13)	.118(-08)	.175(-10)	.145(-10)	.648(-11)
6			.863(-13)	.781(-11)	.394(-10)	.168(-10)	.972(-11)
7				.371(-12)	.831(-09)	.262(-10)	.165(-10)
8				.678(-13)	.103(-10)	.469(-10)	.196(-10)
9					.108(-11)	.103(-08)	.263(-10)
10					.317(-12)	.147(-10)	.575(-10)
11					.162(-12)	.136(-11)	.128(-08)
12						.292(-12)	.236(-10)
13						.995(-13)	.337(-11)
14							.328(-12)

Table 66 H + H_2 DMBE NON REACTIVE T_{tr}=2000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.103(-10)	.177(-10)	.193(-10)	.157(-10)	.767(-11)	.573(-11)
1		.221(-08)	.184(-10)	.206(-10)	.136(-10)	.730(-11)	.640(-11)
2		.815(-12)	.200(-10)	.183(-10)	.162(-10)	.114(-10)	.515(-11)
3		.860(-13)	.194(-08)	.239(-10)	.173(-10)	.150(-10)	.716(-11)
4			.166(-11)	.247(-10)	.240(-10)	.260(-10)	.920(-11)
5			.202(-13)	.158(-08)	.322(-10)	.191(-10)	.141(-10)
6			.218(-13)	.205(-11)	.359(-10)	.194(-10)	.217(-10)
7				.112(-12)	.161(-08)	.284(-10)	.201(-10)
8					.393(-11)	.461(-10)	.392(-10)
9					.243(-12)	.212(-08)	.338(-10)
10					.372(-13)	.865(-11)	.638(-10)
11						.593(-12)	.213(-08)
12						.236(-12)	.154(-10)
13						.110(-12)	.311(-11)
14						.421(-13)	.453(-12)

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Table 67 H + H_2 DMBE NON REACTIVE T_{tr}=2000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.115(-10)	.152(-10)	.195(-10)	.159(-10)	.721(-11)	.515(-11)
1		.215(-08)	.187(-10)	.198(-10)	.154(-10)	.800(-11)	.425(-11)
2		.743(-12)	.227(-10)	.196(-10)	.181(-10)	.150(-10)	.785(-11)
3		.196(-13)	.189(-08)	.195(-10)	.205(-10)	.110(-10)	.693(-11)
4			.155(-11)	.331(-10)	.215(-10)	.154(-10)	.127(-10)
5			.143(-12)	.155(-08)	.250(-10)	.158(-10)	.105(-10)
6				.263(-11)	.381(-10)	.284(-10)	.194(-10)
7				.156(-12)	.157(-08)	.265(-10)	.200(-10)
8				.252(-13)	.463(-11)	.507(-10)	.314(-10)
9					.326(-12)	.205(-08)	.384(-10)
10					.800(-13)	.688(-11)	.647(-10)
11						.120(-11)	.205(-08)
12						.313(-12)	.178(-10)
13						.123(-12)	.314(-11)
14							.663(-12)

Table 68 H + H_2 DMBE NON REACTIVE T_{tr}=2000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.111(-10)	.149(-10)	.202(-10)	.171(-10)	.772(-11)	.614(-11)
1		.215(-08)	.162(-10)	.184(-10)	.176(-10)	.898(-11)	.640(-11)
2		.759(-12)	.211(-10)	.233(-10)	.144(-10)	.924(-11)	.640(-11)
3		.497(-13)	.191(-08)	.217(-10)	.208(-10)	.101(-10)	.949(-11)
4			.193(-11)	.328(-10)	.231(-10)	.154(-10)	.595(-11)
5			.729(-13)	.158(-08)	.241(-10)	.198(-10)	.150(-10)
6				.355(-11)	.353(-10)	.237(-10)	.123(-10)
7				.405(-12)	.158(-08)	.317(-10)	.162(-10)
8				.000(-00)	.797(-11)	.601(-10)	.243(-10)
9				.252(-13)	.568(-12)	.204(-08)	.294(-10)
10					.969(-13)	.125(-10)	.678(-10)
11						.184(-11)	.200(-08)
12						.338(-12)	.316(-10)
13							.528(-11)
14							.750(-12)

Table 69 H + H_2 DMBE NON REACTIVE T_{tr}=2000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.125(-10)	.158(-10)	.160(-10)	.163(-10)	.867(-11)	.502(-11)
1		.215(-08)	.158(-10)	.172(-10)	.151(-10)	.110(-10)	.440(-11)
2		.196(-11)	.238(-10)	.197(-10)	.127(-10)	.981(-11)	.689(-11)
3		.168(-12)	.192(-08)	.211(-10)	.137(-10)	.799(-11)	.884(-11)
4			.390(-11)	.386(-10)	.195(-10)	.121(-10)	.662(-11)
5			.129(-12)	.157(-08)	.266(-10)	.190(-10)	.134(-10)
6				.601(-11)	.488(-10)	.231(-10)	.150(-10)
7				.293(-12)	.156(-08)	.384(-10)	.191(-10)
8				.509(-13)	.121(-10)	.692(-10)	.335(-10)
9				.281(-13)	.113(-11)	.200(-08)	.334(-10)
10					.303(-12)	.224(-10)	.784(-10)
11					.750(-13)	.367(-11)	.194(-08)
12						.102(-11)	.337(-10)
13						.474(-13)	.597(-11)
14							.114(-11)

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Table 70 H + H_2 DMBE NON REACTIVE T_{tr}=2000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.158(-10)	.139(-10)	.152(-10)	.123(-10)	.935(-11)	.726(-11)
1		.213(-08)	.180(-10)	.166(-10)	.136(-10)	.102(-10)	.500(-11)
2		.585(-11)	.331(-10)	.205(-10)	.124(-10)	.782(-11)	.576(-11)
3		.387(-12)	.188(-08)	.261(-10)	.137(-10)	.134(-10)	.649(-11)
4		.134(-12)	.969(-11)	.579(-10)	.150(-10)	.135(-10)	.741(-11)
5			.115(-11)	.150(-08)	.299(-10)	.213(-10)	.113(-10)
6			.835(-13)	.157(-10)	.696(-10)	.221(-10)	.169(-10)
7				.195(-11)	.147(-08)	.364(-10)	.188(-10)
8				.390(-12)	.289(-10)	.721(-10)	.288(-10)
9				.625(-13)	.284(-11)	.192(-08)	.336(-10)
10				.523(-13)	.874(-12)	.284(-10)	.760(-10)
11					.215(-12)	.447(-11)	.189(-08)
12					.132(-12)	.144(-11)	.420(-10)
13						.274(-12)	.666(-11)
14						.712(-13)	.180(-11)

Table 71 H + H_2 DMBE NON REACTIVE T_{tr}=4000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.307(-10)	.305(-10)	.302(-10)	.265(-10)	.132(-10)	.664(-11)
1		.294(-08)	.284(-10)	.272(-10)	.225(-10)	.153(-10)	.693(-11)
2		.670(-11)	.422(-10)	.232(-10)	.258(-10)	.167(-10)	.102(-10)
3		.140(-11)	.252(-08)	.281(-10)	.195(-10)	.173(-10)	.117(-10)
4		.546(-13)	.792(-11)	.463(-10)	.303(-10)	.365(-10)	.130(-10)
5			.158(-11)	.211(-08)	.407(-10)	.247(-10)	.175(-10)
6			.382(-12)	.105(-10)	.611(-10)	.298(-10)	.253(-10)
7			.153(-12)	.200(-11)	.162(-08)	.457(-10)	.310(-10)
8			.278(-13)	.686(-12)	.151(-10)	.713(-10)	.377(-10)
9				.770(-13)	.346(-11)	.229(-08)	.447(-10)
10					.456(-12)	.252(-10)	.807(-10)
11					.208(-12)	.585(-11)	.305(-08)
12					.110(-12)	.136(-11)	.404(-10)
13						.118(-12)	.100(-10)
14							.116(-11)

Table 72 H + H_2 DMBE NON REACTIVE T_{tr}=4000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.326(-10)	.286(-10)	.304(-10)	.240(-10)	.145(-10)	.106(-10)
1		.293(-08)	.282(-10)	.235(-10)	.218(-10)	.156(-10)	.756(-11)
2		.777(-11)	.449(-10)	.209(-10)	.235(-10)	.158(-10)	.104(-10)
3		.131(-11)	.254(-08)	.291(-10)	.191(-10)	.194(-10)	.112(-10)
4		.000(-00)	.906(-11)	.417(-10)	.306(-10)	.326(-10)	.139(-10)
5		.765(-13)	.148(-11)	.212(-08)	.403(-10)	.233(-10)	.178(-10)
6			.202(-12)	.101(-10)	.593(-10)	.237(-10)	.203(-10)
7			.221(-12)	.237(-11)	.167(-08)	.468(-10)	.285(-10)
8			.278(-13)	.489(-12)	.158(-10)	.714(-10)	.368(-10)
9				.262(-12)	.305(-11)	.227(-08)	.424(-10)
10					.958(-12)	.243(-10)	.105(-09)
11					.251(-12)	.610(-11)	.299(-08)
12					.114(-12)	.110(-11)	.370(-10)
13						.414(-12)	.116(-10)
14							.135(-11)

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Table 73 H + H_2 DMBE NON REACTIVE T_{tr}=4000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.326(-10)	.301(-10)	.278(-10)	.192(-10)	.131(-10)	.877(-11)
1		.293(-08)	.290(-10)	.255(-10)	.176(-10)	.130(-10)	.727(-11)
2		.898(-11)	.441(-10)	.248(-10)	.188(-10)	.112(-10)	.895(-11)
3		.106(-11)	.254(-08)	.298(-10)	.228(-10)	.167(-10)	.123(-10)
4		.184(-12)	.100(-10)	.523(-10)	.280(-10)	.275(-10)	.113(-10)
5		.350(-13)	.115(-11)	.213(-08)	.382(-10)	.289(-10)	.155(-10)
6			.418(-12)	.113(-10)	.659(-10)	.321(-10)	.148(-10)
7			.199(-12)	.227(-11)	.164(-08)	.399(-10)	.371(-10)
8			.546(-13)	.501(-12)	.178(-10)	.841(-10)	.342(-10)
9				.193(-12)	.316(-11)	.228(-08)	.480(-10)
10					.860(-12)	.292(-10)	.110(-09)
11					.766(-12)	.637(-11)	.292(-08)
12					.202(-12)	.202(-11)	.587(-10)
13						.609(-12)	.117(-10)
14						.591(-12)	.128(-11)

Table 74 H + H_2 DMBE NON REACTIVE T_{tr}=4000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.362(-10)	.275(-10)	.284(-10)	.172(-10)	.137(-10)	.107(-10)
1		.293(-08)	.319(-10)	.256(-10)	.199(-10)	.145(-10)	.691(-11)
2		.118(-10)	.527(-10)	.266(-10)	.246(-10)	.133(-10)	.100(-10)
3		.156(-11)	.254(-08)	.321(-10)	.284(-10)	.144(-10)	.963(-11)
4		.273(-12)	.163(-10)	.651(-10)	.268(-10)	.150(-10)	.136(-10)
5			.158(-11)	.211(-08)	.430(-10)	.221(-10)	.144(-10)
6			.317(-12)	.198(-10)	.872(-10)	.269(-10)	.206(-10)
7			.126(-12)	.286(-11)	.215(-08)	.443(-10)	.238(-10)
8				.112(-11)	.333(-10)	.921(-10)	.392(-10)
9				.480(-13)	.596(-11)	.286(-08)	.477(-10)
10				.424(-13)	.293(-11)	.416(-10)	.128(-09)
11				.323(-13)	.482(-12)	.825(-11)	.284(-08)
12					.405(-12)	.176(-11)	.667(-10)
13					.774(-13)	.119(-11)	.162(-10)
14							.424(-11)

Table 75 H + H_2 DMBE NON REACTIVE T_{tr}=4000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.448(-10)	.213(-10)	.223(-10)	.252(-10)	.200(-10)	.844(-11)
1		.289(-08)	.292(-10)	.234(-10)	.147(-10)	.127(-10)	.577(-11)
2		.145(-10)	.626(-10)	.295(-10)	.181(-10)	.146(-10)	.117(-10)
3		.299(-11)	.248(-08)	.387(-10)	.225(-10)	.136(-10)	.758(-11)
4		.619(-12)	.235(-10)	.821(-10)	.284(-10)	.179(-10)	.117(-10)
5		.848(-13)	.515(-11)	.201(-08)	.401(-10)	.208(-10)	.136(-10)
6		.641(-13)	.153(-11)	.428(-10)	.108(-09)	.371(-10)	.228(-10)
7			.287(-12)	.702(-11)	.147(-08)	.482(-10)	.239(-10)
8			.509(-13)	.134(-11)	.551(-10)	.112(-09)	.296(-10)
9			.120(-12)	.935(-12)	.993(-11)	.274(-08)	.534(-10)
10				.271(-12)	.310(-11)	.543(-10)	.139(-09)
11				.000(-00)	.460(-12)	.915(-11)	.276(-08)
12				.671(-13)	.234(-12)	.487(-11)	.811(-10)
13				.991(-13)	.174(-12)	.106(-11)	.126(-10)
14						.520(-12)	.385(-11)

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Table 76 H + H_2 DMBE REACTIVE T_{tr}= 300. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.542(-13)	.211(-11)	.512(-11)	.570(-11)	.472(-11)	.198(-11)
1		.723(-13)	.288(-11)	.590(-11)	.625(-11)	.544(-11)	.240(-11)
2			.510(-11)	.977(-11)	.885(-11)	.785(-11)	.381(-11)
3			.585(-11)	.154(-10)	.136(-10)	.117(-10)	.604(-11)
4				.323(-10)	.220(-10)	.152(-10)	.101(-10)
5				.312(-10)	.348(-10)	.233(-10)	.130(-10)
6				.510(-14)	.731(-10)	.381(-10)	.224(-10)
7					.641(-10)	.673(-10)	.332(-10)
8					.883(-14)	.117(-09)	.610(-10)
9						.105(-09)	.108(-09)
10						.177(-12)	.208(-09)
11							.171(-09)
12							.133(-11)

Table 77 H + H_2 DMBE REACTIVE T_{tr}= 300. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.515(-13)	.135(-11)	.422(-11)	.488(-11)	.502(-11)	.331(-11)
1		.476(-13)	.234(-11)	.545(-11)	.496(-11)	.515(-11)	.267(-11)
2			.412(-11)	.869(-11)	.623(-11)	.722(-11)	.458(-11)
3			.468(-11)	.126(-10)	.140(-10)	.108(-10)	.603(-11)
4				.251(-10)	.177(-10)	.148(-10)	.120(-10)
5				.266(-10)	.307(-10)	.219(-10)	.127(-10)
6				.283(-13)	.613(-10)	.375(-10)	.225(-10)
7					.562(-10)	.590(-10)	.339(-10)
8					.108(-12)	.110(-09)	.601(-10)
9						.105(-09)	.100(-09)
10						.116(-11)	.196(-09)
11							.181(-09)
12							.614(-11)
13							.128(-13)

Table 78 H + H_2 DMBE REACTIVE T_{tr}= 300. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.242(-13)	.925(-12)	.310(-11)	.445(-11)	.467(-11)	.230(-11)
1		.482(-13)	.163(-11)	.407(-11)	.503(-11)	.554(-11)	.177(-11)
2			.276(-11)	.680(-11)	.740(-11)	.751(-11)	.379(-11)
3			.279(-11)	.937(-11)	.106(-10)	.991(-11)	.696(-11)
4			.189(-13)	.186(-10)	.158(-10)	.174(-10)	.812(-11)
5				.207(-10)	.262(-10)	.211(-10)	.132(-10)
6				.585(-12)	.501(-10)	.342(-10)	.191(-10)
7					.526(-10)	.551(-10)	.298(-10)
8					.238(-11)	.103(-09)	.557(-10)
9						.111(-09)	.100(-09)
10						.850(-11)	.171(-09)
11						.309(-12)	.211(-09)
12							.380(-10)
13							.291(-11)
14							.447(-13)

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Table 79 H + H_2 DMBE REACTIVE T_{tr}= 300. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.145(-13)	.539(-12)	.250(-11)	.491(-11)	.330(-11)	.161(-11)
1		.439(-13)	.114(-11)	.323(-11)	.559(-11)	.474(-11)	.175(-11)
2			.153(-11)	.554(-11)	.607(-11)	.571(-11)	.276(-11)
3			.263(-11)	.780(-11)	.103(-10)	.104(-10)	.472(-11)
4			.237(-12)	.154(-10)	.161(-10)	.141(-10)	.654(-11)
5			.507(-13)	.197(-10)	.246(-10)	.213(-10)	.124(-10)
6				.388(-11)	.436(-10)	.322(-10)	.179(-10)
7				.512(-12)	.588(-10)	.507(-10)	.316(-10)
8				.337(-13)	.149(-10)	.897(-10)	.503(-10)
9					.153(-11)	.129(-09)	.886(-10)
10					.474(-12)	.367(-10)	.176(-09)
11						.954(-11)	.219(-09)
12						.125(-12)	.853(-10)
13							.890(-11)
14							.184(-12)

Table 80 H + H_2 DMBE REACTIVE T_{tr}= 300. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.245(-13)	.542(-12)	.349(-11)	.521(-11)	.320(-11)	.944(-12)
1		.352(-13)	.102(-11)	.356(-11)	.453(-11)	.384(-11)	.256(-11)
2		.765(-13)	.141(-11)	.483(-11)	.520(-11)	.477(-11)	.183(-11)
3		.389(-13)	.232(-11)	.629(-11)	.905(-11)	.895(-11)	.409(-11)
4		.898(-13)	.195(-11)	.120(-10)	.156(-10)	.155(-10)	.579(-11)
5			.123(-11)	.208(-10)	.241(-10)	.203(-10)	.773(-11)
6			.113(-12)	.135(-10)	.409(-10)	.295(-10)	.172(-10)
7				.600(-11)	.671(-10)	.488(-10)	.286(-10)
8				.240(-11)	.360(-10)	.930(-10)	.452(-10)
9				.567(-13)	.175(-10)	.135(-09)	.838(-10)
10					.381(-11)	.681(-10)	.175(-09)
11					.184(-12)	.185(-10)	.240(-09)
12						.547(-12)	.113(-09)
13							.145(-10)
14							.310(-12)

Table 81 H + H_2 DMBE REACTIVE T_{tr}= 500. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.578(-12)	.647(-11)	.962(-11)	.106(-10)	.705(-11)	.449(-11)
1		.102(-11)	.751(-11)	.108(-10)	.112(-10)	.104(-10)	.721(-11)
2			.179(-10)	.184(-10)	.160(-10)	.103(-10)	.665(-11)
3			.173(-10)	.314(-10)	.221(-10)	.175(-10)	.867(-11)
4				.563(-10)	.403(-10)	.217(-10)	.148(-10)
5				.562(-10)	.616(-10)	.368(-10)	.236(-10)
6				.189(-13)	.110(-09)	.635(-10)	.380(-10)
7					.917(-10)	.975(-10)	.512(-10)
8					.203(-12)	.173(-09)	.930(-10)
9						.132(-09)	.148(-09)
10						.123(-11)	.252(-09)
11							.201(-09)
12							.392(-11)
13							.497(-13)
14							.195(-13)

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Table 82 H + H_2 DMBE REACTIVE T_{tr}= 500. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.480(-12)	.520(-11)	.897(-11)	.975(-11)	.624(-11)	.318(-11)
1		.899(-12)	.665(-11)	.971(-11)	.107(-10)	.851(-11)	.586(-11)
2			.130(-10)	.158(-10)	.145(-10)	.126(-10)	.669(-11)
3			.128(-10)	.258(-10)	.208(-10)	.166(-10)	.102(-10)
4			.569(-13)	.497(-10)	.384(-10)	.232(-10)	.140(-10)
5				.496(-10)	.568(-10)	.393(-10)	.227(-10)
6				.667(-13)	.102(-09)	.623(-10)	.340(-10)
7					.855(-10)	.929(-10)	.510(-10)
8					.626(-12)	.163(-09)	.885(-10)
9					.107(-13)	.129(-09)	.152(-09)
10						.184(-11)	.248(-09)
11						.872(-14)	.219(-09)
12							.962(-11)
13							.597(-12)
14							.140(-13)

Table 83 H + H_2 DMBE REACTIVE T_{tr}= 500. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.353(-12)	.449(-11)	.790(-11)	.742(-11)	.512(-11)	.204(-11)
1		.616(-12)	.498(-11)	.931(-11)	.805(-11)	.830(-11)	.708(-11)
2			.110(-10)	.122(-10)	.141(-10)	.946(-11)	.372(-11)
3			.113(-10)	.195(-10)	.209(-10)	.157(-10)	.903(-11)
4			.109(-12)	.391(-10)	.329(-10)	.250(-10)	.132(-10)
5				.441(-10)	.511(-10)	.384(-10)	.199(-10)
6				.935(-12)	.905(-10)	.550(-10)	.336(-10)
7				.161(-13)	.869(-10)	.847(-10)	.534(-10)
8					.249(-11)	.153(-09)	.804(-10)
9					.103(-12)	.148(-09)	.143(-09)
10						.108(-10)	.245(-09)
11						.630(-12)	.238(-09)
12							.542(-10)
13							.273(-11)
14							.163(-12)

Table 84 H + H_2 DMBE REACTIVE T_{tr}= 500. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.359(-12)	.384(-11)	.663(-11)	.660(-11)	.482(-11)	.253(-11)
1		.518(-12)	.454(-11)	.794(-11)	.967(-11)	.884(-11)	.307(-11)
2		.451(-13)	.720(-11)	.909(-11)	.119(-10)	.110(-10)	.454(-11)
3			.940(-11)	.171(-10)	.186(-10)	.134(-10)	.799(-11)
4			.163(-11)	.334(-10)	.270(-10)	.240(-10)	.106(-10)
5			.245(-13)	.428(-10)	.487(-10)	.323(-10)	.214(-10)
6				.785(-11)	.787(-10)	.500(-10)	.259(-10)
7				.952(-12)	.934(-10)	.871(-10)	.487(-10)
8				.107(-12)	.208(-10)	.148(-09)	.834(-10)
9					.269(-11)	.160(-09)	.141(-09)
10					.793(-12)	.449(-10)	.228(-09)
11						.881(-11)	.250(-09)
12						.231(-12)	.987(-10)
13						.268(-13)	.102(-10)
14							.907(-12)

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Table 85 H + H_2 DMBE REACTIVE T_{tr}= 500. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.380(-12)	.288(-11)	.534(-11)	.614(-11)	.527(-11)	.267(-11)
1		.524(-12)	.415(-11)	.738(-11)	.932(-11)	.633(-11)	.276(-11)
2		.606(-12)	.539(-11)	.105(-10)	.106(-10)	.616(-11)	.417(-11)
3		.228(-12)	.107(-10)	.152(-10)	.185(-10)	.145(-10)	.757(-11)
4		.162(-13)	.706(-11)	.319(-10)	.275(-10)	.188(-10)	.996(-11)
5			.187(-11)	.477(-10)	.389(-10)	.330(-10)	.207(-10)
6			.235(-12)	.242(-10)	.755(-10)	.535(-10)	.223(-10)
7			.267(-13)	.805(-11)	.103(-09)	.851(-10)	.436(-10)
8				.274(-11)	.562(-10)	.129(-09)	.772(-10)
9				.603(-13)	.163(-10)	.169(-09)	.132(-09)
10					.488(-11)	.884(-10)	.219(-09)
11					.183(-12)	.222(-10)	.276(-09)
12						.131(-11)	.127(-09)
13						.253(-13)	.243(-10)
14							.151(-11)

Table 86 H + H_2 DMBE REACTIVE T_{tr}=1000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.612(-11)	.184(-10)	.193(-10)	.167(-10)	.157(-10)	.732(-11)
1		.112(-10)	.239(-10)	.243(-10)	.182(-10)	.150(-10)	.682(-11)
2		.764(-13)	.503(-10)	.393(-10)	.299(-10)	.208(-10)	.101(-10)
3			.443(-10)	.636(-10)	.462(-10)	.290(-10)	.217(-10)
4			.281(-12)	.122(-09)	.753(-10)	.439(-10)	.320(-10)
5				.908(-10)	.123(-09)	.795(-10)	.512(-10)
6				.950(-12)	.185(-09)	.117(-09)	.655(-10)
7				.153(-13)	.113(-09)	.173(-09)	.105(-09)
8					.231(-11)	.238(-09)	.159(-09)
9					.199(-13)	.152(-09)	.236(-09)
10						.568(-11)	.310(-09)
11						.307(-12)	.210(-09)
12							.193(-10)
13							.167(-11)
14							.143(-12)

Table 87 H + H_2 DMBE REACTIVE T_{tr}=1000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.499(-11)	.153(-10)	.169(-10)	.122(-10)	.130(-10)	.730(-11)
1		.101(-10)	.235(-10)	.245(-10)	.164(-10)	.168(-10)	.678(-11)
2		.112(-12)	.448(-10)	.362(-10)	.307(-10)	.215(-10)	.112(-10)
3			.437(-10)	.581(-10)	.441(-10)	.271(-10)	.199(-10)
4			.317(-12)	.109(-09)	.713(-10)	.423(-10)	.286(-10)
5				.863(-10)	.114(-09)	.737(-10)	.479(-10)
6				.165(-11)	.181(-09)	.112(-09)	.633(-10)
7				.153(-13)	.111(-09)	.163(-09)	.993(-10)
8					.282(-11)	.232(-09)	.150(-09)
9					.765(-13)	.165(-09)	.234(-09)
10						.885(-11)	.313(-09)
11						.226(-12)	.227(-09)
12							.256(-10)
13							.272(-11)
14							.390(-12)

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Table 88 H + H_2 DMBE REACTIVE T_{tr}=1000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.406(-11)	.126(-10)	.153(-10)	.127(-10)	.121(-10)	.673(-11)
1		.835(-11)	.187(-10)	.214(-10)	.172(-10)	.170(-10)	.754(-11)
2		.254(-12)	.372(-10)	.305(-10)	.292(-10)	.192(-10)	.123(-10)
3			.383(-10)	.510(-10)	.389(-10)	.292(-10)	.171(-10)
4			.115(-11)	.948(-10)	.646(-10)	.423(-10)	.284(-10)
5				.843(-10)	.109(-09)	.678(-10)	.456(-10)
6				.368(-11)	.162(-09)	.108(-09)	.567(-10)
7				.154(-12)	.116(-09)	.152(-09)	.950(-10)
8					.850(-11)	.217(-09)	.161(-09)
9					.213(-12)	.181(-09)	.222(-09)
10						.201(-10)	.284(-09)
11						.110(-11)	.256(-09)
12						.195(-12)	.547(-10)
13						.443(-13)	.774(-11)
14							.716(-12)

Table 89 H + H_2 DMBE REACTIVE T_{tr}=1000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.341(-11)	.113(-10)	.150(-10)	.119(-10)	.931(-11)	.520(-11)
1		.763(-11)	.155(-10)	.177(-10)	.147(-10)	.134(-10)	.447(-11)
2		.764(-12)	.299(-10)	.313(-10)	.265(-10)	.206(-10)	.134(-10)
3			.390(-10)	.485(-10)	.362(-10)	.285(-10)	.155(-10)
4			.463(-11)	.820(-10)	.614(-10)	.414(-10)	.258(-10)
5			.522(-12)	.848(-10)	.937(-10)	.613(-10)	.322(-10)
6				.135(-10)	.148(-09)	.950(-10)	.588(-10)
7				.138(-11)	.138(-09)	.148(-09)	.895(-10)
8				.345(-13)	.303(-10)	.224(-09)	.139(-09)
9					.503(-11)	.198(-09)	.226(-09)
10					.374(-12)	.558(-10)	.277(-09)
11					.327(-13)	.105(-10)	.272(-09)
12						.788(-12)	.994(-10)
13						.320(-13)	.195(-10)
14							.148(-11)

Table 90 H + H_2 DMBE REACTIVE T_{tr}=1000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.432(-11)	.943(-11)	.120(-10)	.123(-10)	.598(-11)	.386(-11)
1		.869(-11)	.127(-10)	.168(-10)	.157(-10)	.112(-10)	.392(-11)
2		.299(-11)	.256(-10)	.252(-10)	.195(-10)	.140(-10)	.106(-10)
3		.748(-12)	.442(-10)	.402(-10)	.346(-10)	.258(-10)	.140(-10)
4		.757(-13)	.189(-10)	.847(-10)	.546(-10)	.371(-10)	.274(-10)
5		.000(-00)	.444(-11)	.949(-10)	.865(-10)	.570(-10)	.345(-10)
6		.115(-12)	.930(-12)	.403(-10)	.141(-09)	.910(-10)	.525(-10)
7			.882(-13)	.112(-10)	.151(-09)	.140(-09)	.854(-10)
8				.204(-11)	.755(-10)	.206(-09)	.134(-09)
9				.359(-12)	.309(-10)	.211(-09)	.210(-09)
10				.000(-00)	.435(-11)	.112(-09)	.280(-09)
11				.257(-13)	.574(-12)	.307(-10)	.276(-09)
12					.839(-13)	.341(-11)	.125(-09)
13						.402(-12)	.277(-10)
14							.279(-11)

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Table 91 H + H_2 DMBE REACTIVE T_{tr}=2000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.309(-10)	.341(-10)	.375(-10)	.288(-10)	.195(-10)	.134(-10)
1		.411(-10)	.582(-10)	.458(-10)	.351(-10)	.284(-10)	.203(-10)
2		.131(-11)	.117(-09)	.791(-10)	.562(-10)	.415(-10)	.243(-10)
3		.221(-13)	.809(-10)	.130(-09)	.899(-10)	.705(-10)	.443(-10)
4			.411(-11)	.188(-09)	.136(-09)	.875(-10)	.542(-10)
5			.285(-12)	.119(-09)	.181(-09)	.144(-09)	.765(-10)
6				.664(-11)	.242(-09)	.183(-09)	.119(-09)
7				.504(-12)	.131(-09)	.226(-09)	.175(-09)
8				.431(-13)	.119(-10)	.262(-09)	.228(-09)
9				.256(-13)	.127(-11)	.182(-09)	.305(-09)
10					.191(-12)	.230(-10)	.299(-09)
11					.000(-00)	.318(-11)	.208(-09)
12					.255(-13)	.480(-12)	.414(-10)
13						.540(-13)	.937(-11)
14							.108(-11)

Table 92 H + H_2 DMBE REACTIVE T_{tr}=2000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.308(-10)	.355(-10)	.325(-10)	.298(-10)	.188(-10)	.129(-10)
1		.385(-10)	.594(-10)	.497(-10)	.311(-10)	.268(-10)	.168(-10)
2		.204(-11)	.105(-09)	.696(-10)	.556(-10)	.404(-10)	.269(-10)
3		.972(-13)	.835(-10)	.116(-09)	.783(-10)	.657(-10)	.309(-10)
4			.329(-11)	.175(-09)	.130(-09)	.930(-10)	.605(-10)
5			.130(-12)	.118(-09)	.180(-09)	.127(-09)	.812(-10)
6				.840(-11)	.233(-09)	.189(-09)	.106(-09)
7				.518(-12)	.132(-09)	.217(-09)	.169(-09)
8				.371(-13)	.141(-10)	.273(-09)	.212(-09)
9					.118(-11)	.168(-09)	.309(-09)
10					.137(-12)	.294(-10)	.306(-09)
11					.338(-13)	.396(-11)	.198(-09)
12						.900(-12)	.444(-10)
13						.254(-12)	.765(-11)
14						.477(-13)	.553(-12)

Table 93 H + H_2 DMBE REACTIVE T_{tr}=2000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.286(-10)	.330(-10)	.344(-10)	.306(-10)	.185(-10)	.105(-10)
1		.365(-10)	.529(-10)	.415(-10)	.347(-10)	.229(-10)	.134(-10)
2		.294(-11)	.972(-10)	.664(-10)	.510(-10)	.393(-10)	.251(-10)
3		.131(-12)	.812(-10)	.103(-09)	.749(-10)	.611(-10)	.350(-10)
4			.616(-11)	.157(-09)	.126(-09)	.825(-10)	.540(-10)
5			.244(-12)	.119(-09)	.169(-09)	.135(-09)	.769(-10)
6			.449(-13)	.114(-10)	.214(-09)	.169(-09)	.106(-09)
7				.690(-12)	.154(-09)	.213(-09)	.157(-09)
8				.383(-13)	.185(-10)	.272(-09)	.209(-09)
9					.216(-11)	.193(-09)	.274(-09)
10					.254(-12)	.357(-10)	.305(-09)
11						.815(-11)	.236(-09)
12						.128(-11)	.726(-10)
13						.479(-13)	.162(-10)
14						.819(-13)	.179(-11)

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Table 94 H + H_2 DMBE REACTIVE T_{tr}=2000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.232(-10)	.275(-10)	.301(-10)	.245(-10)	.163(-10)	.107(-10)
1		.388(-10)	.459(-10)	.376(-10)	.367(-10)	.245(-10)	.155(-10)
2		.333(-11)	.831(-10)	.652(-10)	.507(-10)	.327(-10)	.202(-10)
3		.288(-12)	.854(-10)	.100(-09)	.804(-10)	.567(-10)	.328(-10)
4			.124(-10)	.150(-09)	.105(-09)	.778(-10)	.536(-10)
5			.143(-11)	.128(-09)	.160(-09)	.115(-09)	.667(-10)
6			.699(-13)	.254(-10)	.211(-09)	.165(-09)	.966(-10)
7				.212(-11)	.163(-09)	.208(-09)	.147(-09)
8				.674(-12)	.457(-10)	.253(-09)	.185(-09)
9				.661(-13)	.667(-11)	.213(-09)	.255(-09)
10					.153(-11)	.707(-10)	.293(-09)
11					.304(-12)	.167(-10)	.238(-09)
12					.899(-13)	.457(-11)	.109(-09)
13						.922(-12)	.235(-10)
14						.471(-13)	.238(-11)

Table 95 H + H_2 DMBE REACTIVE T_{tr}=2000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.233(-10)	.258(-10)	.272(-10)	.238(-10)	.135(-10)	.956(-11)
1		.399(-10)	.431(-10)	.364(-10)	.292(-10)	.193(-10)	.145(-10)
2		.129(-10)	.738(-10)	.592(-10)	.463(-10)	.354(-10)	.149(-10)
3		.293(-11)	.911(-10)	.102(-09)	.718(-10)	.500(-10)	.318(-10)
4		.297(-12)	.358(-10)	.135(-09)	.107(-09)	.752(-10)	.487(-10)
5			.777(-11)	.137(-09)	.146(-09)	.113(-09)	.628(-10)
6			.219(-11)	.591(-10)	.210(-09)	.156(-09)	.904(-10)
7			.333(-12)	.179(-10)	.190(-09)	.217(-09)	.134(-09)
8			.471(-13)	.584(-11)	.747(-10)	.255(-09)	.181(-09)
9				.722(-12)	.369(-10)	.211(-09)	.244(-09)
10				.286(-12)	.744(-11)	.119(-09)	.270(-09)
11				.905(-13)	.205(-11)	.321(-10)	.265(-09)
12					.415(-12)	.880(-11)	.122(-09)
13					.000(-00)	.184(-11)	.341(-10)
14					.306(-13)	.244(-12)	.384(-11)

Table 96 H + H_2 DMBE REACTIVE T_{tr}=4000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.853(-10)	.777(-10)	.760(-10)	.500(-10)	.444(-10)	.206(-10)
1		.886(-10)	.125(-09)	.104(-09)	.904(-10)	.554(-10)	.470(-10)
2		.110(-10)	.180(-09)	.148(-09)	.120(-09)	.830(-10)	.531(-10)
3		.211(-11)	.120(-09)	.174(-09)	.162(-09)	.120(-09)	.714(-10)
4		.178(-12)	.184(-10)	.207(-09)	.199(-09)	.149(-09)	.818(-10)
5		.977(-13)	.285(-11)	.133(-09)	.236(-09)	.211(-09)	.122(-09)
6			.636(-12)	.277(-10)	.240(-09)	.243(-09)	.167(-09)
7			.120(-12)	.642(-11)	.136(-09)	.245(-09)	.207(-09)
8			.000(-00)	.158(-11)	.338(-10)	.247(-09)	.243(-09)
9			.317(-13)	.539(-12)	.896(-11)	.163(-09)	.261(-09)
10				.311(-12)	.319(-11)	.491(-10)	.254(-09)
11				.153(-12)	.809(-12)	.148(-10)	.184(-09)
12					.276(-12)	.513(-11)	.578(-10)
13					.625(-13)	.114(-11)	.109(-10)
14					.447(-13)	.168(-12)	.354(-11)

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Table 97 H + H_2 DMBE REACTIVE T_{tr}=4000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.868(-10)	.777(-10)	.711(-10)	.524(-10)	.415(-10)	.201(-10)
1		.919(-10)	.119(-09)	.948(-10)	.843(-10)	.525(-10)	.465(-10)
2		.110(-10)	.170(-09)	.142(-09)	.108(-09)	.799(-10)	.537(-10)
3		.209(-11)	.117(-09)	.188(-09)	.157(-09)	.116(-09)	.672(-10)
4		.108(-12)	.193(-10)	.206(-09)	.191(-09)	.160(-09)	.900(-10)
5		.709(-13)	.336(-11)	.135(-09)	.216(-09)	.203(-09)	.127(-09)
6			.617(-12)	.308(-10)	.236(-09)	.236(-09)	.160(-09)
7			.169(-12)	.711(-11)	.143(-09)	.248(-09)	.192(-09)
8				.152(-11)	.405(-10)	.257(-09)	.236(-09)
9				.334(-12)	.976(-11)	.175(-09)	.262(-09)
10				.318(-12)	.307(-11)	.523(-10)	.255(-09)
11				.195(-12)	.165(-11)	.163(-10)	.200(-09)
12					.275(-12)	.503(-11)	.658(-10)
13						.842(-12)	.148(-10)
14						.451(-12)	.311(-11)

Table 98 H + H_2 DMBE REACTIVE T_{tr}=4000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.792(-10)	.706(-10)	.623(-10)	.531(-10)	.413(-10)	.231(-10)
1		.909(-10)	.105(-09)	.923(-10)	.903(-10)	.567(-10)	.378(-10)
2		.122(-10)	.172(-09)	.139(-09)	.103(-09)	.739(-10)	.478(-10)
3		.254(-11)	.126(-09)	.172(-09)	.161(-09)	.112(-09)	.586(-10)
4		.205(-12)	.212(-10)	.203(-09)	.196(-09)	.149(-09)	.914(-10)
5		.740(-13)	.425(-11)	.141(-09)	.224(-09)	.203(-09)	.108(-09)
6			.132(-11)	.345(-10)	.224(-09)	.245(-09)	.157(-09)
7			.242(-12)	.681(-11)	.156(-09)	.244(-09)	.173(-09)
8			.320(-13)	.149(-11)	.485(-10)	.249(-09)	.231(-09)
9			.657(-13)	.587(-12)	.127(-10)	.149(-09)	.262(-09)
10				.134(-12)	.354(-11)	.607(-10)	.267(-09)
11				.112(-12)	.117(-11)	.185(-10)	.180(-09)
12				.520(-13)	.346(-12)	.593(-11)	.685(-10)
13					.160(-12)	.208(-11)	.166(-10)
14						.320(-12)	.313(-11)

Table 99 H + H_2 DMBE REACTIVE T_{tr}=4000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.745(-10)	.678(-10)	.570(-10)	.481(-10)	.370(-10)	.211(-10)
1		.900(-10)	.102(-09)	.869(-10)	.671(-10)	.497(-10)	.368(-10)
2		.165(-10)	.146(-09)	.126(-09)	.104(-09)	.687(-10)	.495(-10)
3		.334(-11)	.139(-09)	.156(-09)	.138(-09)	.107(-09)	.599(-10)
4		.683(-12)	.274(-10)	.196(-09)	.175(-09)	.134(-09)	.852(-10)
5		.906(-13)	.836(-11)	.157(-09)	.221(-09)	.202(-09)	.101(-09)
6		.134(-12)	.182(-11)	.476(-10)	.204(-09)	.226(-09)	.127(-09)
7			.586(-12)	.119(-10)	.182(-09)	.221(-09)	.159(-09)
8			.931(-13)	.339(-11)	.732(-10)	.259(-09)	.203(-09)
9			.397(-13)	.704(-12)	.198(-10)	.198(-09)	.247(-09)
10			.311(-13)	.320(-12)	.535(-11)	.830(-10)	.223(-09)
11				.000(-00)	.235(-11)	.293(-10)	.186(-09)
12				.388(-13)	.413(-12)	.102(-10)	.966(-10)
13				.000(-00)	.273(-12)	.528(-11)	.246(-10)
14				.415(-13)		.187(-12)	.909(-11)

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Table 100 H + H_2 DMBE REACTIVE T_{tr}=4000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.773(-10)	.645(-10)	.550(-10)	.442(-10)	.427(-10)	.181(-10)
1		.911(-10)	.984(-10)	.830(-10)	.619(-10)	.462(-10)	.312(-10)
2		.342(-10)	.150(-09)	.117(-09)	.924(-10)	.733(-10)	.411(-10)
3		.689(-11)	.138(-09)	.168(-09)	.132(-09)	.844(-10)	.597(-10)
4		.236(-11)	.602(-10)	.194(-09)	.176(-09)	.137(-09)	.772(-10)
5		.653(-12)	.164(-10)	.152(-09)	.220(-09)	.170(-09)	.969(-10)
6		.212(-12)	.437(-11)	.791(-10)	.220(-09)	.236(-09)	.126(-09)
7		.000(-00)	.198(-11)	.348(-10)	.199(-09)	.224(-09)	.144(-09)
8		.230(-12)	.699(-12)	.104(-10)	.108(-09)	.255(-09)	.205(-09)
9			.788(-13)	.376(-11)	.412(-10)	.202(-09)	.214(-09)
10				.127(-11)	.160(-10)	.110(-09)	.248(-09)
11				.167(-12)	.697(-11)	.382(-10)	.212(-09)
12				.227(-12)	.179(-11)	.145(-10)	.922(-10)
13					.488(-12)	.413(-11)	.345(-10)
14					.105(-12)	.481(-12)	.451(-11)

Table 101 H + H_2 BKMP NON REACTIVE T_{tr}= 300. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.276(-13)	.297(-11)	.692(-11)	.706(-11)	.495(-11)	.157(-11)
1		.879(-09)	.255(-11)	.574(-11)	.852(-11)	.589(-11)	.349(-11)
2			.239(-11)	.915(-11)	.680(-11)	.568(-11)	.347(-11)
3			.844(-09)	.114(-10)	.126(-10)	.746(-11)	.468(-11)
4				.118(-10)	.146(-10)	.142(-10)	.686(-11)
5				.688(-09)	.196(-10)	.156(-10)	.912(-11)
6					.180(-10)	.239(-10)	.149(-10)
7					.611(-09)	.260(-10)	.168(-10)
8						.305(-10)	.225(-10)
9						.688(-09)	.364(-10)
10						.188(-13)	.363(-10)
11							.569(-09)
12							.144(-12)

Table 102 H + H_2 BKMP NON REACTIVE T_{tr}= 300. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.110(-13)	.261(-11)	.639(-11)	.604(-11)	.444(-11)	.148(-11)
1		.879(-09)	.194(-11)	.564(-11)	.740(-11)	.576(-11)	.240(-11)
2			.202(-11)	.783(-11)	.697(-11)	.584(-11)	.458(-11)
3			.850(-09)	.106(-10)	.139(-10)	.939(-11)	.469(-11)
4				.103(-10)	.152(-10)	.140(-10)	.649(-11)
5				.708(-09)	.188(-10)	.162(-10)	.858(-11)
6					.193(-10)	.230(-10)	.151(-10)
7					.625(-09)	.254(-10)	.184(-10)
8						.295(-10)	.263(-10)
9						.704(-09)	.241(-10)
10						.691(-13)	.326(-10)
11							.588(-09)
12							.519(-12)
13							.000(-00)
14							.188(-13)

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Table 103 H + H_2 BKMP NON REACTIVE T_{tr}= 300. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.311(-13)	.176(-11)	.534(-11)	.563(-11)	.510(-11)	.115(-11)
1		.890(-09)	.183(-11)	.556(-11)	.675(-11)	.595(-11)	.236(-11)
2			.181(-11)	.683(-11)	.831(-11)	.620(-11)	.629(-11)
3			.869(-09)	.720(-11)	.134(-10)	.891(-11)	.579(-11)
4				.996(-11)	.126(-10)	.103(-10)	.647(-11)
5				.730(-09)	.166(-10)	.148(-10)	.985(-11)
6				.259(-12)	.184(-10)	.192(-10)	.951(-11)
7					.625(-09)	.267(-10)	.141(-10)
8					.393(-12)	.258(-10)	.267(-10)
9						.680(-09)	.235(-10)
10						.424(-12)	.316(-10)
11						.205(-13)	.538(-09)
12							.183(-11)
13							.660(-13)
14							.446(-13)

Table 104 H + H_2 BKMP NON REACTIVE T_{tr}= 300. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.297(-13)	.142(-11)	.522(-11)	.592(-11)	.463(-11)	.127(-11)
1		.879(-09)	.139(-11)	.512(-11)	.746(-11)	.516(-11)	.234(-11)
2			.162(-11)	.622(-11)	.801(-11)	.560(-11)	.483(-11)
3			.861(-09)	.640(-11)	.102(-10)	.888(-11)	.513(-11)
4			.119(-12)	.938(-11)	.119(-10)	.130(-10)	.687(-11)
5				.733(-09)	.187(-10)	.118(-10)	.856(-11)
6				.599(-12)	.167(-10)	.196(-10)	.111(-10)
7					.606(-09)	.242(-10)	.131(-10)
8					.881(-12)	.226(-10)	.207(-10)
9						.656(-09)	.275(-10)
10						.181(-11)	.292(-10)
11						.306(-12)	.491(-09)
12							.412(-11)
13							.661(-12)
14							.188(-13)

Table 105 H + H_2 BKMP NON REACTIVE T_{tr}= 300. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.275(-12)	.147(-11)	.595(-11)	.446(-11)	.429(-11)	.134(-11)
1		.878(-09)	.117(-11)	.496(-11)	.675(-11)	.524(-11)	.557(-11)
2		.116(-12)	.346(-11)	.546(-11)	.973(-11)	.705(-11)	.434(-11)
3			.854(-09)	.595(-11)	.107(-10)	.820(-11)	.299(-11)
4			.504(-12)	.121(-10)	.883(-11)	.126(-10)	.649(-11)
5			.399(-13)	.700(-09)	.150(-10)	.129(-10)	.597(-11)
6				.242(-11)	.175(-10)	.150(-10)	.864(-11)
7				.410(-12)	.553(-09)	.204(-10)	.164(-10)
8				.576(-13)	.217(-11)	.273(-10)	.182(-10)
9					.459(-12)	.603(-09)	.235(-10)
10					.958(-13)	.475(-11)	.320(-10)
11						.344(-11)	.447(-09)
12							.769(-11)
13							.498(-12)
14							.380(-13)

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Table 106 H + H_2 BKMP NON REACTIVE T_{tr}= 500. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.412(-12)	.527(-11)	.101(-10)	.910(-11)	.401(-11)	.564(-11)
1		.113(-08)	.471(-11)	.108(-10)	.961(-11)	.674(-11)	.244(-11)
2			.585(-11)	.117(-10)	.111(-10)	.920(-11)	.410(-11)
3			.105(-08)	.172(-10)	.137(-10)	.113(-10)	.497(-11)
4				.180(-10)	.177(-10)	.137(-10)	.104(-10)
5				.836(-09)	.195(-10)	.158(-10)	.130(-10)
6				.269(-13)	.297(-10)	.286(-10)	.159(-10)
7					.763(-09)	.327(-10)	.171(-10)
8					.828(-13)	.311(-10)	.272(-10)
9						.956(-09)	.273(-10)
10						.142(-12)	.578(-10)
11							.847(-09)
12							.109(-11)
13							.271(-13)
14							.166(-13)

Table 107 H + H_2 BKMP NON REACTIVE T_{tr}= 500. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.407(-12)	.499(-11)	.103(-10)	.889(-11)	.485(-11)	.660(-11)
1		.113(-08)	.436(-11)	.103(-10)	.861(-11)	.969(-11)	.280(-11)
2			.595(-11)	.115(-10)	.101(-10)	.838(-11)	.499(-11)
3			.106(-08)	.166(-10)	.118(-10)	.120(-10)	.807(-11)
4				.151(-10)	.162(-10)	.164(-10)	.951(-11)
5				.858(-09)	.210(-10)	.234(-10)	.136(-10)
6					.289(-10)	.228(-10)	.168(-10)
7					.780(-09)	.307(-10)	.156(-10)
8					.733(-13)	.318(-10)	.229(-10)
9						.941(-09)	.304(-10)
10						.172(-12)	.445(-10)
11							.829(-09)
12							.140(-11)
13							.781(-13)

Table 108 H + H_2 BKMP NON REACTIVE T_{tr}= 500. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.245(-12)	.426(-11)	.983(-11)	.882(-11)	.480(-11)	.435(-11)
1		.113(-08)	.401(-11)	.973(-11)	.878(-11)	.437(-11)	.277(-11)
2			.578(-11)	.990(-11)	.116(-10)	.120(-10)	.452(-11)
3			.107(-08)	.129(-10)	.145(-10)	.974(-11)	.632(-11)
4			.956(-13)	.129(-10)	.150(-10)	.130(-10)	.739(-11)
5				.879(-09)	.172(-10)	.154(-10)	.971(-11)
6				.573(-13)	.229(-10)	.185(-10)	.162(-10)
7					.786(-09)	.336(-10)	.192(-10)
8					.525(-12)	.307(-10)	.239(-10)
9						.933(-09)	.303(-10)
10						.837(-12)	.357(-10)
11							.771(-09)
12							.429(-11)
13							.210(-12)
14							.310(-13)

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Table 109 H + H_2 BKMP NON REACTIVE T_{tr}= 500. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.251(-12)	.319(-11)	.923(-11)	.970(-11)	.462(-11)	.295(-11)
1		.113(-08)	.325(-11)	.900(-11)	.106(-10)	.584(-11)	.313(-11)
2		.323(-13)	.509(-11)	.886(-11)	.103(-10)	.831(-11)	.313(-11)
3			.108(-08)	.109(-10)	.154(-10)	.937(-11)	.349(-11)
4			.395(-12)	.158(-10)	.154(-10)	.114(-10)	.589(-11)
5				.880(-09)	.148(-10)	.184(-10)	.886(-11)
6				.979(-12)	.245(-10)	.174(-10)	.115(-10)
7					.758(-09)	.278(-10)	.220(-10)
8					.154(-11)	.328(-10)	.231(-10)
9						.875(-09)	.307(-10)
10						.260(-11)	.397(-10)
11						.171(-12)	.707(-09)
12						.426(-13)	.770(-11)
13							.946(-12)
14							.158(-12)

Table 110 H + H_2 BKMP NON REACTIVE T_{tr}= 500. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.122(-11)	.298(-11)	.779(-11)	.745(-11)	.357(-11)	.257(-11)
1		.113(-08)	.316(-11)	.859(-11)	.855(-11)	.501(-11)	.215(-11)
2		.230(-12)	.774(-11)	.921(-11)	.103(-10)	.807(-11)	.264(-11)
3		.643(-13)	.107(-08)	.116(-10)	.107(-10)	.939(-11)	.525(-11)
4			.168(-11)	.158(-10)	.155(-10)	.141(-10)	.578(-11)
5			.956(-13)	.844(-09)	.176(-10)	.137(-10)	.884(-11)
6				.325(-11)	.225(-10)	.150(-10)	.125(-10)
7				.319(-12)	.704(-09)	.171(-10)	.138(-10)
8				.000(-00)	.527(-11)	.280(-10)	.172(-10)
9				.210(-13)	.154(-12)	.831(-09)	.316(-10)
10					.728(-13)	.426(-11)	.330(-10)
11						.662(-12)	.690(-09)
12						.568(-13)	.104(-10)
13							.143(-11)
14							.220(-12)

Table 111 H + H_2 BKMP NON REACTIVE T_{tr}=1000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.250(-11)	.123(-10)	.146(-10)	.102(-10)	.760(-11)	.525(-11)
1		.158(-08)	.125(-10)	.148(-10)	.104(-10)	.691(-11)	.411(-11)
2			.130(-10)	.165(-10)	.145(-10)	.145(-10)	.634(-11)
3			.140(-08)	.209(-10)	.166(-10)	.128(-10)	.863(-11)
4			.844(-13)	.217(-10)	.236(-10)	.236(-10)	.932(-11)
5				.112(-08)	.199(-10)	.264(-10)	.958(-11)
6				.216(-12)	.259(-10)	.202(-10)	.147(-10)
7					.106(-08)	.312(-10)	.222(-10)
8					.947(-12)	.361(-10)	.300(-10)
9						.141(-08)	.296(-10)
10						.109(-11)	.390(-10)
11						.976(-13)	.135(-08)
12							.501(-11)
13							.327(-12)
14							.651(-13)

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Table 112 H + H_2 BKMP NON REACTIVE T_{tr}=1000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.271(-11)	.123(-10)	.151(-10)	.109(-10)	.860(-11)	.516(-11)
1		.158(-08)	.117(-10)	.142(-10)	.118(-10)	.794(-11)	.482(-11)
2		.424(-13)	.132(-10)	.147(-10)	.150(-10)	.943(-11)	.507(-11)
3			.141(-08)	.201(-10)	.187(-10)	.137(-10)	.123(-10)
4			.149(-12)	.209(-10)	.195(-10)	.160(-10)	.961(-11)
5				.112(-08)	.232(-10)	.173(-10)	.115(-10)
6				.518(-12)	.279(-10)	.335(-10)	.135(-10)
7					.107(-08)	.292(-10)	.257(-10)
8					.841(-12)	.271(-10)	.305(-10)
9						.139(-08)	.348(-10)
10						.155(-11)	.438(-10)
11						.116(-12)	.131(-08)
12						.257(-13)	.531(-11)
13							.432(-12)
14							.396(-13)

Table 113 H + H_2 BKMP NON REACTIVE T_{tr}=1000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.277(-11)	.927(-11)	.126(-10)	.134(-10)	.964(-11)	.524(-11)
1		.158(-08)	.111(-10)	.125(-10)	.121(-10)	.106(-10)	.399(-11)
2			.127(-10)	.173(-10)	.145(-10)	.100(-10)	.477(-11)
3			.141(-08)	.165(-10)	.189(-10)	.920(-11)	.114(-10)
4			.150(-12)	.232(-10)	.183(-10)	.126(-10)	.815(-11)
5				.114(-08)	.270(-10)	.223(-10)	.886(-11)
6				.637(-12)	.308(-10)	.203(-10)	.155(-10)
7					.794(-09)	.250(-10)	.199(-10)
8					.144(-11)	.420(-10)	.194(-10)
9						.132(-08)	.321(-10)
10						.326(-11)	.451(-10)
11						.197(-12)	.122(-08)
12							.112(-10)
13							.131(-11)
14							.122(-12)

Table 114 H + H_2 BKMP NON REACTIVE T_{tr}=1000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.317(-11)	.103(-10)	.154(-10)	.104(-10)	.123(-10)	.399(-11)
1		.158(-08)	.945(-11)	.118(-10)	.105(-10)	.641(-11)	.319(-11)
2		.136(-12)	.124(-10)	.170(-10)	.127(-10)	.874(-11)	.500(-11)
3			.144(-08)	.189(-10)	.198(-10)	.867(-11)	.703(-11)
4			.120(-11)	.269(-10)	.167(-10)	.140(-10)	.864(-11)
5				.115(-08)	.260(-10)	.167(-10)	.906(-11)
6				.222(-11)	.319(-10)	.233(-10)	.112(-10)
7					.105(-08)	.242(-10)	.157(-10)
8					.389(-11)	.364(-10)	.263(-10)
9					.880(-12)	.132(-08)	.272(-10)
10					.139(-12)	.707(-11)	.467(-10)
11						.843(-12)	.116(-08)
12						.145(-12)	.147(-10)
13							.264(-11)
14							.601(-12)

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Table 115 H + H_2 BKMP NON REACTIVE T_{tr}=1000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.570(-11)	.902(-11)	.111(-10)	.820(-11)	.487(-11)	.270(-11)
1		.157(-08)	.105(-10)	.112(-10)	.924(-11)	.676(-11)	.237(-11)
2		.173(-11)	.191(-10)	.165(-10)	.123(-10)	.101(-10)	.416(-11)
3		.498(-13)	.142(-08)	.161(-10)	.148(-10)	.967(-11)	.659(-11)
4			.365(-11)	.298(-10)	.124(-10)	.130(-10)	.723(-11)
5			.737(-12)	.109(-08)	.224(-10)	.173(-10)	.931(-11)
6				.680(-11)	.411(-10)	.170(-10)	.986(-11)
7				.743(-12)	.988(-09)	.247(-10)	.146(-10)
8					.858(-11)	.355(-10)	.217(-10)
9					.140(-11)	.124(-08)	.284(-10)
10					.152(-12)	.137(-10)	.510(-10)
11					.131(-12)	.160(-11)	.113(-08)
12					.177(-13)	.441(-12)	.192(-10)
13						.328(-13)	.415(-11)
14						.558(-13)	.580(-12)

Table 116 H + H_2 BKMP NON REACTIVE T_{tr}=2000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.105(-10)	.182(-10)	.209(-10)	.166(-10)	.103(-10)	.738(-11)
1		.218(-08)	.206(-10)	.178(-10)	.165(-10)	.859(-11)	.653(-11)
2		.711(-12)	.256(-10)	.210(-10)	.187(-10)	.157(-10)	.912(-11)
3		.242(-13)	.188(-08)	.248(-10)	.194(-10)	.196(-10)	.715(-11)
4		.184(-13)	.152(-11)	.352(-10)	.239(-10)	.191(-10)	.130(-10)
5			.128(-12)	.150(-08)	.245(-10)	.238(-10)	.126(-10)
6				.308(-11)	.370(-10)	.282(-10)	.227(-10)
7				.166(-12)	.150(-08)	.296(-10)	.217(-10)
8					.431(-11)	.440(-10)	.288(-10)
9					.671(-13)	.206(-08)	.326(-10)
10					.211(-13)	.470(-11)	.589(-10)
11						.124(-11)	.206(-08)
12						.296(-12)	.110(-10)
13							.282(-11)
14							.590(-12)

Table 117 H + H_2 BKMP NON REACTIVE T_{tr}=2000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.106(-10)	.214(-10)	.225(-10)	.170(-10)	.979(-11)	.665(-11)
1		.218(-08)	.198(-10)	.150(-10)	.178(-10)	.779(-11)	.507(-11)
2		.945(-12)	.265(-10)	.186(-10)	.195(-10)	.133(-10)	.753(-11)
3		.242(-13)	.189(-08)	.233(-10)	.193(-10)	.177(-10)	.768(-11)
4		.184(-13)	.166(-11)	.282(-10)	.187(-10)	.209(-10)	.103(-10)
5			.114(-12)	.153(-08)	.273(-10)	.239(-10)	.124(-10)
6				.316(-11)	.323(-10)	.284(-10)	.196(-10)
7				.173(-12)	.152(-08)	.333(-10)	.277(-10)
8					.481(-11)	.402(-10)	.315(-10)
9					.671(-13)	.205(-08)	.464(-10)
10						.659(-11)	.512(-10)
11						.121(-11)	.200(-08)
12						.132(-12)	.156(-10)
13							.404(-11)
14							.228(-12)

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Table 118 H + H_2 BKMP NON REACTIVE T_{tr}=2000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.120(-10)	.175(-10)	.208(-10)	.202(-10)	.122(-10)	.840(-11)
1		.218(-08)	.184(-10)	.164(-10)	.155(-10)	.774(-11)	.446(-11)
2		.114(-11)	.277(-10)	.247(-10)	.179(-10)	.119(-10)	.765(-11)
3		.308(-13)	.191(-08)	.308(-10)	.213(-10)	.146(-10)	.703(-11)
4			.255(-11)	.338(-10)	.208(-10)	.170(-10)	.764(-11)
5			.900(-13)	.154(-08)	.256(-10)	.201(-10)	.101(-10)
6			.237(-13)	.414(-11)	.424(-10)	.225(-10)	.157(-10)
7				.175(-12)	.151(-08)	.341(-10)	.214(-10)
8				.303(-13)	.599(-11)	.493(-10)	.257(-10)
9					.327(-12)	.199(-08)	.369(-10)
10					.269(-13)	.120(-10)	.573(-10)
11						.143(-11)	.193(-08)
12						.380(-12)	.241(-10)
13						.279(-12)	.340(-11)
14							.961(-12)

Table 119 H + H_2 BKMP NON REACTIVE T_{tr}=2000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.124(-10)	.175(-10)	.242(-10)	.152(-10)	.993(-11)	.404(-11)
1		.218(-08)	.206(-10)	.195(-10)	.143(-10)	.854(-11)	.752(-11)
2		.182(-11)	.265(-10)	.206(-10)	.151(-10)	.136(-10)	.622(-11)
3		.451(-13)	.188(-08)	.288(-10)	.149(-10)	.179(-10)	.107(-10)
4		.000(-00)	.402(-11)	.375(-10)	.200(-10)	.161(-10)	.102(-10)
5		.383(-13)	.291(-12)	.150(-08)	.342(-10)	.148(-10)	.140(-10)
6				.661(-11)	.501(-10)	.204(-10)	.158(-10)
7				.713(-12)	.147(-08)	.351(-10)	.187(-10)
8				.639(-13)	.112(-10)	.520(-10)	.266(-10)
9					.228(-11)	.190(-08)	.424(-10)
10					.745(-13)	.212(-10)	.704(-10)
11					.931(-13)	.355(-11)	.182(-08)
12						.990(-12)	.261(-10)
13						.403(-12)	.660(-11)
14							.101(-11)

Table 120 H + H_2 BKMP NON REACTIVE T_{tr}=2000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.170(-10)	.153(-10)	.223(-10)	.123(-10)	.993(-11)	.623(-11)
1		.215(-08)	.241(-10)	.182(-10)	.134(-10)	.106(-10)	.689(-11)
2		.463(-11)	.424(-10)	.218(-10)	.148(-10)	.124(-10)	.825(-11)
3		.282(-12)	.186(-08)	.256(-10)	.179(-10)	.118(-10)	.514(-11)
4		.109(-12)	.111(-10)	.490(-10)	.211(-10)	.156(-10)	.935(-11)
5		.000(-00)	.140(-11)	.146(-08)	.292(-10)	.210(-10)	.138(-10)
6		.000(-00)	.243(-12)	.172(-10)	.666(-10)	.262(-10)	.972(-11)
7		.725(-13)	.108(-12)	.176(-11)	.139(-08)	.270(-10)	.218(-10)
8				.728(-12)	.243(-10)	.589(-10)	.295(-10)
9				.903(-13)	.359(-11)	.185(-08)	.350(-10)
10				.960(-13)	.705(-12)	.295(-10)	.771(-10)
11					.438(-12)	.665(-11)	.182(-08)
12						.191(-11)	.378(-10)
13						.864(-12)	.971(-11)
14							.538(-12)

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Table 121 H + H_2 BKMP NON REACTIVE T_{tr}=4000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.343(-10)	.358(-10)	.315(-10)	.220(-10)	.193(-10)	.981(-11)
1		.301(-08)	.337(-10)	.210(-10)	.268(-10)	.176(-10)	.119(-10)
2		.613(-11)	.439(-10)	.315(-10)	.251(-10)	.144(-10)	.180(-10)
3		.942(-12)	.257(-08)	.272(-10)	.251(-10)	.407(-10)	.943(-11)
4		.139(-12)	.739(-11)	.513(-10)	.289(-10)	.228(-10)	.159(-10)
5		.404(-13)	.115(-11)	.211(-08)	.286(-10)	.200(-10)	.132(-10)
6			.253(-12)	.999(-11)	.528(-10)	.267(-10)	.278(-10)
7			.105(-12)	.160(-11)	.220(-08)	.478(-10)	.283(-10)
8				.999(-13)	.140(-10)	.717(-10)	.348(-10)
9				.000(-00)	.254(-11)	.303(-08)	.515(-10)
10				.344(-13)	.487(-12)	.219(-10)	.762(-10)
11				.000(-00)	.229(-12)	.304(-11)	.311(-08)
12				.355(-13)	.000(-00)	.244(-11)	.402(-10)
13					.521(-13)	.377(-12)	.843(-11)
14						.865(-13)	.669(-12)

Table 122 H + H_2 BKMP NON REACTIVE T_{tr}=4000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.319(-10)	.358(-10)	.326(-10)	.225(-10)	.144(-10)	.101(-10)
1		.297(-08)	.320(-10)	.224(-10)	.228(-10)	.189(-10)	.100(-10)
2		.713(-11)	.441(-10)	.258(-10)	.223(-10)	.176(-10)	.220(-10)
3		.745(-12)	.257(-08)	.277(-10)	.233(-10)	.356(-10)	.124(-10)
4		.828(-13)	.778(-11)	.534(-10)	.301(-10)	.236(-10)	.155(-10)
5		.404(-13)	.112(-11)	.212(-08)	.273(-10)	.219(-10)	.193(-10)
6			.341(-12)	.837(-11)	.595(-10)	.296(-10)	.313(-10)
7			.352(-13)	.127(-11)	.218(-08)	.382(-10)	.431(-10)
8			.426(-13)	.260(-12)	.133(-10)	.672(-10)	.365(-10)
9				.000(-00)	.254(-11)	.299(-08)	.507(-10)
10				.000(-00)	.526(-12)	.234(-10)	.847(-10)
11				.283(-13)	.368(-12)	.343(-11)	.309(-08)
12				.355(-13)	.615(-13)	.295(-11)	.426(-10)
13					.521(-13)	.227(-12)	.103(-10)
14						.865(-13)	.140(-11)

Table 123 H + H_2 BKMP NON REACTIVE T_{tr}=4000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.314(-10)	.311(-10)	.264(-10)	.225(-10)	.143(-10)	.759(-11)
1		.297(-08)	.342(-10)	.299(-10)	.271(-10)	.180(-10)	.112(-10)
2		.967(-11)	.490(-10)	.279(-10)	.219(-10)	.152(-10)	.862(-11)
3		.918(-12)	.257(-08)	.315(-10)	.246(-10)	.380(-10)	.147(-10)
4		.283(-12)	.102(-10)	.591(-10)	.354(-10)	.180(-10)	.908(-11)
5		.776(-13)	.114(-11)	.211(-08)	.416(-10)	.207(-10)	.160(-10)
6			.557(-12)	.150(-10)	.583(-10)	.276(-10)	.235(-10)
7				.193(-11)	.219(-08)	.385(-10)	.300(-10)
8				.143(-12)	.179(-10)	.786(-10)	.414(-10)
9				.369(-13)	.273(-11)	.295(-08)	.490(-10)
10				.000(-00)	.834(-12)	.333(-10)	.103(-09)
11				.000(-00)	.467(-12)	.349(-11)	.301(-08)
12				.826(-13)	.972(-13)	.331(-11)	.474(-10)
13					.633(-13)	.499(-12)	.128(-10)
14						.199(-12)	.125(-11)

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Table 124 H + H_2 BKMP NON REACTIVE T_{tr}=4000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.386(-10)	.290(-10)	.282(-10)	.227(-10)	.125(-10)	.102(-10)
1		.296(-08)	.347(-10)	.233(-10)	.197(-10)	.125(-10)	.117(-10)
2		.110(-10)	.525(-10)	.267(-10)	.182(-10)	.146(-10)	.109(-10)
3		.146(-11)	.255(-08)	.354(-10)	.226(-10)	.199(-10)	.103(-10)
4		.411(-12)	.177(-10)	.663(-10)	.287(-10)	.214(-10)	.122(-10)
5		.218(-12)	.185(-11)	.208(-08)	.376(-10)	.297(-10)	.152(-10)
6			.322(-12)	.169(-10)	.786(-10)	.276(-10)	.176(-10)
7			.102(-12)	.273(-11)	.213(-08)	.396(-10)	.173(-10)
8			.355(-13)	.764(-12)	.230(-10)	.830(-10)	.438(-10)
9			.814(-13)	.183(-12)	.493(-11)	.286(-08)	.592(-10)
10				.000(-00)	.257(-11)	.344(-10)	.905(-10)
11				.501(-13)	.321(-12)	.103(-10)	.288(-08)
12				.000(-00)	.588(-13)	.286(-11)	.459(-10)
13				.670(-13)	.000(-00)	.155(-11)	.154(-10)
14					.109(-12)	.107(-12)	.346(-11)

Table 125 H + H_2 BKMP NON REACTIVE T_{tr}=4000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.509(-10)	.259(-10)	.277(-10)	.217(-10)	.146(-10)	.752(-11)
1		.290(-08)	.370(-10)	.224(-10)	.227(-10)	.137(-10)	.100(-10)
2		.180(-10)	.662(-10)	.291(-10)	.177(-10)	.134(-10)	.131(-10)
3		.199(-11)	.243(-08)	.379(-10)	.217(-10)	.188(-10)	.908(-11)
4		.738(-12)	.272(-10)	.708(-10)	.209(-10)	.175(-10)	.129(-10)
5		.314(-12)	.539(-11)	.194(-08)	.324(-10)	.231(-10)	.106(-10)
6			.101(-11)	.363(-10)	.106(-09)	.309(-10)	.164(-10)
7			.541(-12)	.824(-11)	.143(-08)	.416(-10)	.239(-10)
8			.124(-12)	.251(-11)	.428(-10)	.894(-10)	.336(-10)
9				.353(-12)	.103(-10)	.268(-08)	.523(-10)
10				.735(-13)	.262(-11)	.548(-10)	.101(-09)
11				.152(-12)	.130(-11)	.847(-11)	.272(-08)
12				.410(-12)	.232(-12)	.411(-11)	.564(-10)
13					.107(-12)	.833(-12)	.146(-10)
14						.551(-12)	.261(-11)

Table 126 H + H_2 BKMP REACTIVE T_{tr}= 300. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.698(-13)	.328(-11)	.939(-11)	.107(-10)	.925(-11)	.552(-11)
1		.520(-13)	.521(-11)	.105(-10)	.101(-10)	.969(-11)	.651(-11)
2			.936(-11)	.147(-10)	.130(-10)	.123(-10)	.731(-11)
3			.849(-11)	.244(-10)	.207(-10)	.152(-10)	.102(-10)
4				.460(-10)	.297(-10)	.201(-10)	.150(-10)
5				.402(-10)	.554(-10)	.364(-10)	.279(-10)
6					.108(-09)	.564(-10)	.347(-10)
7					.810(-10)	.947(-10)	.571(-10)
8					.332(-13)	.159(-09)	.937(-10)
9						.141(-09)	.151(-09)
10						.290(-12)	.247(-09)
11							.184(-09)
12							.127(-11)

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Table 127 H + H_2 BKMP REACTIVE T_{tr}= 300. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.743(-13)	.298(-11)	.737(-11)	.882(-11)	.881(-11)	.394(-11)
1		.495(-13)	.428(-11)	.957(-11)	.108(-10)	.723(-11)	.435(-11)
2			.792(-11)	.133(-10)	.122(-10)	.124(-10)	.697(-11)
3			.686(-11)	.216(-10)	.224(-10)	.152(-10)	.837(-11)
4				.424(-10)	.290(-10)	.226(-10)	.145(-10)
5				.348(-10)	.511(-10)	.361(-10)	.215(-10)
6				.723(-13)	.946(-10)	.554(-10)	.371(-10)
7					.849(-10)	.914(-10)	.533(-10)
8					.108(-11)	.156(-09)	.897(-10)
9						.147(-09)	.149(-09)
10						.823(-12)	.239(-09)
11							.222(-09)
12							.630(-11)
13							.150(-12)

Table 128 H + H_2 BKMP REACTIVE T_{tr}= 300. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.824(-14)	.237(-11)	.850(-11)	.836(-11)	.871(-11)	.257(-11)
1		.449(-13)	.301(-11)	.908(-11)	.106(-10)	.812(-11)	.423(-11)
2			.520(-11)	.109(-10)	.126(-10)	.124(-10)	.107(-10)
3			.476(-11)	.170(-10)	.201(-10)	.162(-10)	.892(-11)
4				.337(-10)	.274(-10)	.229(-10)	.144(-10)
5				.331(-10)	.496(-10)	.436(-10)	.237(-10)
6				.718(-12)	.916(-10)	.540(-10)	.314(-10)
7					.956(-10)	.935(-10)	.591(-10)
8					.396(-11)	.144(-09)	.938(-10)
9						.172(-09)	.148(-09)
10						.108(-10)	.230(-09)
11						.751(-12)	.238(-09)
12							.423(-10)
13							.487(-11)
14							.118(-12)

Table 129 H + H_2 BKMP REACTIVE T_{tr}= 300. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.101(-13)	.159(-11)	.674(-11)	.913(-11)	.745(-11)	.255(-11)
1		.212(-13)	.226(-11)	.705(-11)	.107(-10)	.701(-11)	.227(-11)
2			.387(-11)	.101(-10)	.120(-10)	.130(-10)	.595(-11)
3			.437(-11)	.146(-10)	.179(-10)	.124(-10)	.861(-11)
4			.712(-12)	.259(-10)	.295(-10)	.215(-10)	.173(-10)
5			.127(-13)	.385(-10)	.427(-10)	.363(-10)	.226(-10)
6				.797(-11)	.816(-10)	.501(-10)	.241(-10)
7				.111(-11)	.112(-09)	.907(-10)	.525(-10)
8				.235(-12)	.206(-10)	.140(-09)	.892(-10)
9					.365(-11)	.181(-09)	.128(-09)
10					.493(-12)	.513(-10)	.230(-09)
11					.171(-13)	.718(-11)	.281(-09)
12						.695(-13)	.849(-10)
13							.118(-10)
14							.164(-12)

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Table 130 H + H_2 BKMP REACTIVE T_{tr}= 300. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.163(-13)	.197(-11)	.640(-11)	.750(-11)	.698(-11)	.242(-11)
1		.976(-13)	.193(-11)	.699(-11)	.920(-11)	.757(-11)	.389(-11)
2		.163(-12)	.323(-11)	.826(-11)	.833(-11)	.103(-10)	.513(-11)
3		.163(-12)	.419(-11)	.130(-10)	.178(-10)	.157(-10)	.877(-11)
4			.344(-11)	.235(-10)	.250(-10)	.216(-10)	.138(-10)
5			.285(-11)	.441(-10)	.421(-10)	.330(-10)	.251(-10)
6			.637(-12)	.268(-10)	.795(-10)	.516(-10)	.276(-10)
7			.267(-13)	.101(-10)	.124(-09)	.889(-10)	.467(-10)
8				.218(-11)	.604(-10)	.139(-09)	.923(-10)
9				.645(-13)	.208(-10)	.191(-09)	.135(-09)
10					.389(-11)	.827(-10)	.207(-09)
11					.118(-12)	.186(-10)	.300(-09)
12						.337(-12)	.122(-09)
13							.151(-10)
14							.374(-12)

Table 131 H + H_2 BKMP REACTIVE T_{tr}= 500. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.745(-12)	.761(-11)	.137(-10)	.129(-10)	.100(-10)	.482(-11)
1		.108(-11)	.117(-10)	.160(-10)	.178(-10)	.122(-10)	.571(-11)
2			.215(-10)	.252(-10)	.228(-10)	.167(-10)	.114(-10)
3			.232(-10)	.375(-10)	.313(-10)	.214(-10)	.147(-10)
4				.731(-10)	.488(-10)	.314(-10)	.245(-10)
5				.643(-10)	.755(-10)	.523(-10)	.331(-10)
6				.174(-13)	.146(-09)	.775(-10)	.504(-10)
7					.980(-10)	.127(-09)	.755(-10)
8					.165(-12)	.198(-09)	.133(-09)
9						.140(-09)	.191(-09)
10						.973(-12)	.280(-09)
11							.190(-09)
12							.383(-11)
13							.630(-13)

Table 132 H + H_2 BKMP REACTIVE T_{tr}= 500. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.733(-12)	.737(-11)	.125(-10)	.151(-10)	.970(-11)	.504(-11)
1		.101(-11)	.100(-10)	.147(-10)	.183(-10)	.115(-10)	.748(-11)
2			.186(-10)	.207(-10)	.223(-10)	.173(-10)	.961(-11)
3			.196(-10)	.345(-10)	.294(-10)	.196(-10)	.165(-10)
4			.200(-13)	.681(-10)	.506(-10)	.326(-10)	.313(-10)
5				.614(-10)	.733(-10)	.535(-10)	.313(-10)
6				.896(-13)	.126(-09)	.759(-10)	.481(-10)
7					.104(-09)	.129(-09)	.731(-10)
8					.515(-12)	.196(-09)	.138(-09)
9						.147(-09)	.187(-09)
10						.210(-11)	.287(-09)
11							.202(-09)
12							.873(-11)
13							.642(-12)

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Table 133 H + H_2 BKMP REACTIVE T_{tr}= 500. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.631(-12)	.603(-11)	.114(-10)	.135(-10)	.803(-11)	.354(-11)
1		.104(-11)	.884(-11)	.149(-10)	.137(-10)	.126(-10)	.508(-11)
2		.729(-14)	.157(-10)	.202(-10)	.215(-10)	.151(-10)	.102(-10)
3			.156(-10)	.321(-10)	.307(-10)	.206(-10)	.134(-10)
4			.980(-13)	.600(-10)	.418(-10)	.363(-10)	.193(-10)
5				.597(-10)	.741(-10)	.512(-10)	.343(-10)
6				.127(-11)	.119(-09)	.753(-10)	.464(-10)
7					.120(-09)	.122(-09)	.721(-10)
8					.627(-11)	.189(-09)	.122(-09)
9					.237(-13)	.172(-09)	.184(-09)
10						.170(-10)	.290(-09)
11						.714(-12)	.258(-09)
12							.527(-10)
13							.285(-11)
14							.163(-12)

Table 134 H + H_2 BKMP REACTIVE T_{tr}= 500. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.436(-12)	.509(-11)	.107(-10)	.127(-10)	.563(-11)	.261(-11)
1		.801(-12)	.720(-11)	.118(-10)	.116(-10)	.948(-11)	.337(-11)
2		.632(-13)	.113(-10)	.152(-10)	.187(-10)	.121(-10)	.887(-11)
3		.165(-13)	.148(-10)	.269(-10)	.259(-10)	.193(-10)	.117(-10)
4			.199(-11)	.521(-10)	.433(-10)	.307(-10)	.177(-10)
5			.148(-12)	.687(-10)	.710(-10)	.427(-10)	.296(-10)
6				.124(-10)	.114(-09)	.774(-10)	.447(-10)
7				.145(-11)	.134(-09)	.111(-09)	.642(-10)
8					.285(-10)	.194(-09)	.113(-09)
9					.455(-11)	.213(-09)	.191(-09)
10					.383(-12)	.570(-10)	.290(-09)
11						.962(-11)	.294(-09)
12						.350(-12)	.903(-10)
13							.108(-10)
14							.497(-12)

Table 135 H + H_2 BKMP REACTIVE T_{tr}= 500. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.426(-12)	.545(-11)	.104(-10)	.105(-10)	.588(-11)	.352(-11)
1		.975(-12)	.512(-11)	.105(-10)	.111(-10)	.954(-11)	.444(-11)
2		.722(-12)	.892(-11)	.144(-10)	.151(-10)	.149(-10)	.981(-11)
3		.317(-12)	.151(-10)	.277(-10)	.251(-10)	.163(-10)	.981(-11)
4		.104(-12)	.827(-11)	.443(-10)	.360(-10)	.255(-10)	.158(-10)
5			.358(-11)	.707(-10)	.629(-10)	.469(-10)	.266(-10)
6			.614(-12)	.383(-10)	.105(-09)	.678(-10)	.381(-10)
7			.511(-13)	.150(-10)	.154(-09)	.111(-09)	.636(-10)
8				.221(-11)	.726(-10)	.184(-09)	.113(-09)
9				.131(-12)	.256(-10)	.229(-09)	.183(-09)
10					.516(-11)	.105(-09)	.272(-09)
11					.258(-12)	.279(-10)	.306(-09)
12						.137(-11)	.135(-09)
13						.191(-13)	.178(-10)
14							.782(-12)

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Table 136 H + H_2 BKMP REACTIVE T_{tr}=1000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.817(-11)	.187(-10)	.267(-10)	.213(-10)	.157(-10)	.972(-11)
1		.110(-10)	.304(-10)	.278(-10)	.275(-10)	.180(-10)	.166(-10)
2		.308(-13)	.608(-10)	.449(-10)	.311(-10)	.273(-10)	.154(-10)
3			.519(-10)	.730(-10)	.528(-10)	.394(-10)	.322(-10)
4			.393(-12)	.139(-09)	.924(-10)	.551(-10)	.376(-10)
5				.806(-10)	.132(-09)	.887(-10)	.524(-10)
6				.890(-12)	.193(-09)	.118(-09)	.883(-10)
7					.133(-09)	.183(-09)	.128(-09)
8					.241(-11)	.240(-09)	.174(-09)
9					.437(-13)	.159(-09)	.263(-09)
10						.562(-11)	.319(-09)
11						.554(-13)	.201(-09)
12						.219(-13)	.149(-10)
13							.152(-11)
14							.835(-13)

Table 137 H + H_2 BKMP REACTIVE T_{tr}=1000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.728(-11)	.177(-10)	.284(-10)	.225(-10)	.145(-10)	.971(-11)
1		.983(-11)	.304(-10)	.292(-10)	.272(-10)	.177(-10)	.103(-10)
2		.101(-12)	.556(-10)	.426(-10)	.317(-10)	.257(-10)	.183(-10)
3			.494(-10)	.706(-10)	.546(-10)	.366(-10)	.288(-10)
4			.622(-12)	.127(-09)	.859(-10)	.574(-10)	.325(-10)
5				.920(-10)	.127(-09)	.898(-10)	.528(-10)
6				.156(-11)	.189(-09)	.124(-09)	.917(-10)
7					.130(-09)	.194(-09)	.129(-09)
8					.280(-11)	.249(-09)	.185(-09)
9					.752(-13)	.165(-09)	.283(-09)
10						.922(-11)	.310(-09)
11						.181(-12)	.201(-09)
12						.219(-13)	.223(-10)
13							.303(-11)
14							.370(-13)

Table 138 H + H_2 BKMP REACTIVE T_{tr}=1000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.612(-11)	.161(-10)	.215(-10)	.253(-10)	.141(-10)	.865(-11)
1		.101(-10)	.228(-10)	.252(-10)	.241(-10)	.154(-10)	.713(-11)
2		.176(-12)	.489(-10)	.393(-10)	.329(-10)	.238(-10)	.129(-10)
3			.454(-10)	.608(-10)	.447(-10)	.384(-10)	.202(-10)
4			.125(-11)	.110(-09)	.799(-10)	.548(-10)	.345(-10)
5				.939(-10)	.117(-09)	.795(-10)	.491(-10)
6				.411(-11)	.184(-09)	.116(-09)	.854(-10)
7				.153(-13)	.132(-09)	.187(-09)	.119(-09)
8					.917(-11)	.239(-09)	.169(-09)
9					.365(-12)	.196(-09)	.254(-09)
10						.220(-10)	.313(-09)
11						.178(-11)	.259(-09)
12						.179(-12)	.550(-10)
13							.783(-11)
14							.446(-12)

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Table 139 H + H_2 BKMP REACTIVE T_{tr}=1000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.546(-11)	.147(-10)	.160(-10)	.163(-10)	.104(-10)	.882(-11)
1		.835(-11)	.194(-10)	.231(-10)	.226(-10)	.177(-10)	.942(-11)
2		.666(-12)	.426(-10)	.345(-10)	.306(-10)	.205(-10)	.181(-10)
3			.467(-10)	.555(-10)	.478(-10)	.268(-10)	.173(-10)
4			.535(-11)	.102(-09)	.704(-10)	.485(-10)	.334(-10)
5			.309(-12)	.109(-09)	.113(-09)	.774(-10)	.540(-10)
6			.397(-13)	.170(-10)	.174(-09)	.114(-09)	.777(-10)
7				.156(-11)	.167(-09)	.173(-09)	.110(-09)
8				.854(-13)	.382(-10)	.273(-09)	.173(-09)
9				.271(-13)	.357(-11)	.220(-09)	.246(-09)
10					.106(-11)	.621(-10)	.309(-09)
11					.871(-13)	.142(-10)	.317(-09)
12						.141(-11)	.104(-09)
13						.000(-00)	.171(-10)
14						.621(-13)	.196(-11)

Table 140 H + H_2 BKMP REACTIVE T_{tr}=1000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.483(-11)	.137(-10)	.205(-10)	.153(-10)	.140(-10)	.633(-11)
1		.927(-11)	.143(-10)	.211(-10)	.163(-10)	.147(-10)	.959(-11)
2		.366(-11)	.334(-10)	.292(-10)	.280(-10)	.262(-10)	.143(-10)
3		.150(-11)	.485(-10)	.507(-10)	.407(-10)	.350(-10)	.184(-10)
4		.226(-12)	.209(-10)	.980(-10)	.683(-10)	.455(-10)	.298(-10)
5			.714(-11)	.126(-09)	.108(-09)	.789(-10)	.477(-10)
6			.112(-11)	.524(-10)	.167(-09)	.113(-09)	.769(-10)
7			.246(-13)	.137(-10)	.187(-09)	.169(-09)	.116(-09)
8				.447(-11)	.891(-10)	.248(-09)	.174(-09)
9				.401(-12)	.269(-10)	.238(-09)	.214(-09)
10					.769(-11)	.125(-09)	.335(-09)
11					.118(-11)	.305(-10)	.293(-09)
12					.000(-00)	.341(-11)	.134(-09)
13					.507(-13)	.447(-12)	.292(-10)
14					.443(-13)	.960(-13)	.242(-11)

Table 141 H + H_2 BKMP REACTIVE T_{tr}=2000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.324(-10)	.450(-10)	.385(-10)	.370(-10)	.245(-10)	.127(-10)
1		.407(-10)	.643(-10)	.537(-10)	.457(-10)	.307(-10)	.224(-10)
2		.141(-11)	.119(-09)	.926(-10)	.589(-10)	.467(-10)	.304(-10)
3		.759(-13)	.836(-10)	.131(-09)	.841(-10)	.735(-10)	.416(-10)
4		.377(-13)	.335(-11)	.203(-09)	.137(-09)	.102(-09)	.657(-10)
5			.171(-12)	.112(-09)	.219(-09)	.155(-09)	.101(-09)
6				.692(-11)	.255(-09)	.185(-09)	.140(-09)
7				.276(-12)	.133(-09)	.243(-09)	.178(-09)
8				.104(-12)	.114(-10)	.268(-09)	.226(-09)
9					.104(-11)	.162(-09)	.281(-09)
10					.109(-12)	.214(-10)	.320(-09)
11					.000(-00)	.354(-11)	.236(-09)
12					.520(-13)	.473(-12)	.347(-10)
13						.163(-12)	.631(-11)
14							.130(-11)

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Table 142 H + H_2 BKMP REACTIVE T_{tr}=2000. T_{rot}= 500.						
v'	v 1	3	5	7	9	11
0	.290(-10)	.416(-10)	.389(-10)	.362(-10)	.234(-10)	.139(-10)
1	.435(-10)	.615(-10)	.519(-10)	.444(-10)	.314(-10)	.251(-10)
2	.169(-11)	.111(-09)	.867(-10)	.614(-10)	.478(-10)	.321(-10)
3	.927(-13)	.866(-10)	.129(-09)	.843(-10)	.730(-10)	.440(-10)
4	.200(-13)	.411(-11)	.194(-09)	.137(-09)	.108(-09)	.586(-10)
5		.198(-12)	.114(-09)	.202(-09)	.137(-09)	.106(-09)
6			.761(-11)	.250(-09)	.177(-09)	.128(-09)
7			.417(-12)	.142(-09)	.255(-09)	.174(-09)
8			.102(-12)	.138(-10)	.262(-09)	.237(-09)
9				.163(-11)	.182(-09)	.288(-09)
10				.210(-12)	.256(-10)	.345(-09)
11				.254(-13)	.353(-11)	.226(-09)
12				.520(-13)	.430(-12)	.440(-10)
13					.105(-12)	.808(-11)
14						.122(-11)

Table 143 H + H_2 BKMP REACTIVE T_{tr}=2000. T_{rot}=1000.						
v'	v 1	3	5	7	9	11
0	.267(-10)	.358(-10)	.367(-10)	.334(-10)	.219(-10)	.115(-10)
1	.414(-10)	.586(-10)	.505(-10)	.379(-10)	.397(-10)	.253(-10)
2	.216(-11)	.104(-09)	.754(-10)	.593(-10)	.528(-10)	.271(-10)
3	.186(-12)	.835(-10)	.116(-09)	.813(-10)	.693(-10)	.424(-10)
4		.600(-11)	.175(-09)	.125(-09)	.984(-10)	.661(-10)
5		.460(-12)	.126(-09)	.201(-09)	.141(-09)	.108(-09)
6			.125(-10)	.240(-09)	.196(-09)	.134(-09)
7			.699(-12)	.160(-09)	.250(-09)	.173(-09)
8			.123(-12)	.246(-10)	.286(-09)	.238(-09)
9				.294(-11)	.181(-09)	.296(-09)
10				.269(-12)	.396(-10)	.300(-09)
11				.531(-13)	.573(-11)	.249(-09)
12				.992(-13)	.145(-11)	.586(-10)
13					.303(-12)	.177(-10)
14						.285(-11)

Table 144 H + H_2 BKMP REACTIVE T_{tr}=2000. T_{rot}=2000.						
v'	v 1	3	5	7	9	11
0	.258(-10)	.315(-10)	.314(-10)	.323(-10)	.178(-10)	.144(-10)
1	.427(-10)	.520(-10)	.469(-10)	.312(-10)	.250(-10)	.220(-10)
2	.486(-11)	.964(-10)	.714(-10)	.595(-10)	.384(-10)	.261(-10)
3	.135(-12)	.892(-10)	.105(-09)	.785(-10)	.641(-10)	.407(-10)
4	.177(-13)	.143(-10)	.168(-09)	.116(-09)	.906(-10)	.567(-10)
5		.124(-11)	.139(-09)	.180(-09)	.135(-09)	.865(-10)
6		.148(-12)	.271(-10)	.226(-09)	.183(-09)	.121(-09)
7			.362(-11)	.186(-09)	.240(-09)	.135(-09)
8			.252(-12)	.471(-10)	.255(-09)	.233(-09)
9			.942(-13)	.744(-11)	.211(-09)	.251(-09)
10				.308(-11)	.825(-10)	.296(-09)
11				.326(-12)	.168(-10)	.261(-09)
12				.299(-13)	.441(-11)	.958(-10)
13				.493(-13)	.546(-12)	.253(-10)
14					.127(-12)	.163(-11)

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Table 145 H + H_2 BKMP REACTIVE T_{tr}=2000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.240(-10)	.280(-10)	.315(-10)	.283(-10)	.181(-10)	.937(-11)
1		.472(-10)	.466(-10)	.414(-10)	.330(-10)	.267(-10)	.163(-10)
2		.133(-10)	.804(-10)	.642(-10)	.526(-10)	.382(-10)	.300(-10)
3		.422(-11)	.101(-09)	.104(-09)	.780(-10)	.668(-10)	.314(-10)
4		.271(-12)	.381(-10)	.160(-09)	.113(-09)	.812(-10)	.617(-10)
5			.929(-11)	.150(-09)	.165(-09)	.130(-09)	.816(-10)
6			.150(-11)	.694(-10)	.213(-09)	.186(-09)	.116(-09)
7			.213(-12)	.196(-10)	.221(-09)	.226(-09)	.152(-09)
8			.168(-12)	.650(-11)	.945(-10)	.270(-09)	.201(-09)
9				.203(-11)	.403(-10)	.247(-09)	.262(-09)
10				.741(-13)	.625(-11)	.135(-09)	.275(-09)
11				.106(-12)	.192(-11)	.290(-10)	.293(-09)
12				.599(-13)	.115(-11)	.775(-11)	.121(-09)
13						.323(-11)	.315(-10)
14						.390(-12)	.275(-11)

Table 146 H + H_2 BKMP REACTIVE T_{tr}=4000. T_{rot}= 300.							
v'	v	1	3	5	7	9	11
0		.961(-10)	.856(-10)	.709(-10)	.575(-10)	.450(-10)	.270(-10)
1		.829(-10)	.122(-09)	.984(-10)	.850(-10)	.699(-10)	.377(-10)
2		.113(-10)	.173(-09)	.150(-09)	.114(-09)	.892(-10)	.487(-10)
3		.179(-11)	.108(-09)	.213(-09)	.154(-09)	.116(-09)	.776(-10)
4		.207(-12)	.194(-10)	.230(-09)	.231(-09)	.178(-09)	.990(-10)
5		.362(-13)	.414(-11)	.127(-09)	.223(-09)	.219(-09)	.121(-09)
6		.000(-00)	.574(-12)	.248(-10)	.258(-09)	.223(-09)	.171(-09)
7		.000(-00)	.870(-13)	.551(-11)	.143(-09)	.259(-09)	.230(-09)
8		.252(-13)	.365(-13)	.120(-11)	.351(-10)	.227(-09)	.268(-09)
9			.000(-00)	.698(-12)	.895(-11)	.173(-09)	.261(-09)
10			.285(-13)	.263(-13)	.329(-11)	.446(-10)	.250(-09)
11				.121(-12)	.139(-11)	.118(-10)	.178(-09)
12				.902(-13)	.452(-12)	.482(-11)	.526(-10)
13					.597(-13)	.916(-12)	.150(-10)
14							.277(-11)

Table 147 H + H_2 BKMP REACTIVE T_{tr}=4000. T_{rot}= 500.							
v'	v	1	3	5	7	9	11
0		.100(-09)	.857(-10)	.653(-10)	.540(-10)	.388(-10)	.257(-10)
1		.820(-10)	.120(-09)	.101(-09)	.845(-10)	.659(-10)	.371(-10)
2		.114(-10)	.167(-09)	.160(-09)	.995(-10)	.902(-10)	.555(-10)
3		.265(-11)	.116(-09)	.210(-09)	.168(-09)	.123(-09)	.706(-10)
4		.302(-12)	.229(-10)	.217(-09)	.216(-09)	.183(-09)	.101(-09)
5		.967(-13)	.378(-11)	.125(-09)	.255(-09)	.219(-09)	.121(-09)
6		.000(-00)	.656(-12)	.225(-10)	.258(-09)	.234(-09)	.171(-09)
7		.000(-00)	.744(-13)	.665(-11)	.145(-09)	.267(-09)	.218(-09)
8		.248(-13)	.733(-13)	.170(-11)	.371(-10)	.240(-09)	.241(-09)
9			.000(-00)	.733(-12)	.966(-11)	.179(-09)	.266(-09)
10			.285(-13)	.728(-13)	.299(-11)	.492(-10)	.206(-09)
11				.895(-13)	.107(-11)	.163(-10)	.206(-09)
12				.902(-13)	.519(-12)	.453(-11)	.502(-10)
13						.586(-12)	.190(-10)
14						.255(-12)	.104(-11)

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Table 148 H + H_2 BKMP REACTIVE T_{tr}=4000. T_{rot}=1000.							
v'	v	1	3	5	7	9	11
0		.900(-10)	.773(-10)	.672(-10)	.529(-10)	.375(-10)	.281(-10)
1		.890(-10)	.119(-09)	.984(-10)	.764(-10)	.613(-10)	.401(-10)
2		.140(-10)	.169(-09)	.149(-09)	.110(-09)	.877(-10)	.488(-10)
3		.203(-11)	.120(-09)	.188(-09)	.156(-09)	.122(-09)	.742(-10)
4		.345(-12)	.209(-10)	.214(-09)	.203(-09)	.161(-09)	.958(-10)
5		.141(-12)	.330(-11)	.143(-09)	.229(-09)	.188(-09)	.107(-09)
6			.972(-12)	.312(-10)	.256(-09)	.227(-09)	.160(-09)
7			.154(-12)	.874(-11)	.149(-09)	.276(-09)	.200(-09)
8			.359(-13)	.222(-11)	.448(-10)	.258(-09)	.248(-09)
9			.709(-13)	.257(-12)	.106(-10)	.208(-09)	.281(-09)
10				.249(-12)	.453(-11)	.681(-10)	.241(-09)
11				.853(-13)	.103(-11)	.181(-10)	.175(-09)
12				.134(-12)	.509(-12)	.501(-11)	.632(-10)
13					.138(-12)	.114(-11)	.250(-10)
14							.367(-11)

Table 149 H + H_2 BKMP REACTIVE T_{tr}=4000. T_{rot}=2000.							
v'	v	1	3	5	7	9	11
0		.825(-10)	.714(-10)	.580(-10)	.517(-10)	.364(-10)	.266(-10)
1		.935(-10)	.113(-09)	.987(-10)	.707(-10)	.545(-10)	.321(-10)
2		.180(-10)	.161(-09)	.137(-09)	.105(-09)	.883(-10)	.671(-10)
3		.206(-11)	.136(-09)	.171(-09)	.155(-09)	.123(-09)	.652(-10)
4		.952(-12)	.272(-10)	.225(-09)	.198(-09)	.162(-09)	.906(-10)
5		.581(-13)	.602(-11)	.162(-09)	.222(-09)	.217(-09)	.128(-09)
6		.436(-13)	.108(-11)	.469(-10)	.250(-09)	.236(-09)	.167(-09)
7			.576(-12)	.158(-10)	.179(-09)	.252(-09)	.177(-09)
8			.839(-13)	.343(-11)	.725(-10)	.254(-09)	.239(-09)
9			.121(-12)	.782(-12)	.216(-10)	.200(-09)	.230(-09)
10			.000(-00)	.302(-12)	.636(-11)	.957(-10)	.264(-09)
11			.269(-13)	.463(-13)	.227(-11)	.315(-10)	.173(-09)
12				.107(-12)	.850(-12)	.786(-11)	.702(-10)
13				.269(-13)	.302(-12)	.412(-11)	.295(-10)
14						.553(-12)	.560(-11)

Table 150 H + H_2 BKMP REACTIVE T_{tr}=4000. T_{rot}=4000.							
v'	v	1	3	5	7	9	11
0		.831(-10)	.713(-10)	.637(-10)	.462(-10)	.327(-10)	.224(-10)
1		.103(-09)	.103(-09)	.848(-10)	.664(-10)	.518(-10)	.302(-10)
2		.359(-10)	.157(-09)	.124(-09)	.986(-10)	.850(-10)	.432(-10)
3		.769(-11)	.145(-09)	.184(-09)	.140(-09)	.106(-09)	.693(-10)
4		.320(-11)	.614(-10)	.213(-09)	.197(-09)	.149(-09)	.773(-10)
5		.363(-12)	.158(-10)	.172(-09)	.204(-09)	.170(-09)	.954(-10)
6		.277(-12)	.604(-11)	.822(-10)	.252(-09)	.224(-09)	.144(-09)
7		.143(-12)	.196(-11)	.386(-10)	.198(-09)	.259(-09)	.163(-09)
8		.471(-13)	.330(-12)	.114(-10)	.120(-09)	.260(-09)	.207(-09)
9		.703(-13)	.136(-12)	.435(-11)	.408(-10)	.207(-09)	.261(-09)
10		.000(-00)		.124(-11)	.175(-10)	.113(-09)	.228(-09)
11		.251(-13)		.345(-12)	.561(-11)	.449(-10)	.227(-09)
12				.000(-00)	.202(-11)	.133(-10)	.840(-10)
13				.667(-13)	.310(-12)	.323(-11)	.323(-10)
14					.130(-12)	.445(-12)	.540(-11)

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Table 151 D + D_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}= 300.								
v'	v 1	3	5	7	9	11	13	15
0	.000(-00)	.126(-12)	.134(-11)	.280(-11)	.303(-11)	.238(-11)	.159(-11)	.724(-12)
1	.613(-09)	.163(-12)	.106(-11)	.251(-11)	.219(-11)	.476(-11)	.105(-11)	.999(-12)
2		.229(-12)	.115(-11)	.297(-11)	.285(-11)	.257(-11)	.182(-11)	.661(-12)
3		.611(-09)	.129(-11)	.385(-11)	.391(-11)	.301(-11)	.270(-11)	.174(-11)
4			.159(-11)	.337(-11)	.380(-11)	.273(-11)	.197(-11)	.110(-11)
5			.585(-09)	.383(-11)	.605(-11)	.376(-11)	.350(-11)	.165(-11)
6				.483(-11)	.599(-11)	.487(-11)	.292(-11)	.251(-11)
7				.523(-09)	.586(-11)	.566(-11)	.619(-11)	.366(-11)
8				.822(-14)	.697(-11)	.669(-11)	.563(-11)	.548(-11)
9					.444(-09)	.867(-11)	.709(-11)	.358(-11)
10						.977(-11)	.840(-11)	.936(-11)
11						.468(-09)	.119(-10)	.622(-11)
12						.514(-13)	.121(-10)	.125(-10)
13							.622(-09)	.127(-10)
14							.514(-13)	.142(-10)
15								.657(-09)
16								.164(-12)

Table 152 D + D_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}= 500.								
v'	v 1	3	5	7	9	11	13	15
0	.000(-00)	.148(-12)	.126(-11)	.221(-11)	.226(-11)	.231(-11)	.142(-11)	.648(-13)
1	.608(-09)	.181(-12)	.917(-12)	.285(-11)	.233(-11)	.175(-11)	.207(-11)	.648(-13)
2		.158(-12)	.103(-11)	.239(-11)	.252(-11)	.249(-11)	.174(-11)	.138(-12)
3		.606(-09)	.939(-12)	.235(-11)	.277(-11)	.255(-11)	.215(-11)	.203(-12)
4		.417(-14)	.143(-11)	.284(-11)	.383(-11)	.394(-11)	.154(-11)	.725(-13)
5			.586(-09)	.332(-11)	.433(-11)	.390(-11)	.269(-11)	.232(-12)
6				.338(-11)	.591(-11)	.388(-11)	.388(-11)	.771(-12)
7				.534(-09)	.414(-11)	.480(-11)	.461(-11)	.495(-12)
8				.200(-13)	.692(-11)	.717(-11)	.529(-11)	.641(-12)
9					.461(-09)	.820(-11)	.609(-11)	.121(-11)
10						.857(-11)	.924(-11)	.257(-11)
11						.870(-09)	.118(-10)	.180(-11)
12						.567(-13)	.113(-10)	.276(-11)
13							.140(-08)	.303(-11)
14							.111(-12)	.652(-11)
15								.627(-11)
16								.111(-10)
17								.184(-10)
18								.335(-10)
19								.785(-09)
20								.836(-11)

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Table 153 D + D_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}=1000.								
v'	v 1	3	5	7	9	11	13	15
0	.000(-00)	.122(-12)	.647(-12)	.149(-11)	.250(-11)	.205(-11)	.183(-11)	.666(-12)
1	.608(-09)	.126(-12)	.720(-12)	.182(-11)	.215(-11)	.184(-11)	.126(-11)	.573(-12)
2		.163(-12)	.701(-12)	.169(-11)	.226(-11)	.158(-11)	.183(-11)	.797(-12)
3		.606(-09)	.690(-12)	.196(-11)	.238(-11)	.247(-11)	.192(-11)	.124(-11)
4			.123(-11)	.227(-11)	.315(-11)	.326(-11)	.214(-11)	.111(-11)
5			.592(-09)	.249(-11)	.378(-11)	.412(-11)	.283(-11)	.195(-11)
6			.124(-13)	.311(-11)	.478(-11)	.515(-11)	.349(-11)	.240(-11)
7				.547(-09)	.421(-11)	.449(-11)	.487(-11)	.291(-11)
8				.687(-13)	.683(-11)	.613(-11)	.566(-11)	.336(-11)
9					.477(-09)	.640(-11)	.807(-11)	.547(-11)
10					.238(-12)	.763(-11)	.885(-11)	.472(-11)
11						.879(-09)	.844(-11)	.717(-11)
12						.312(-12)	.107(-10)	.100(-10)
13							.140(-08)	.106(-10)
14							.580(-12)	.148(-10)
15							.330(-13)	.506(-09)
16								.166(-11)
17								.490(-12)

Table 154 D + D_2 LSTH NON REACTIVE T_{tr}= 300. T_{rot}=4000.								
v'	v 1	3	5	7	9	11	13	15
0	.477(-13)	.946(-13)	.677(-12)	.112(-11)	.167(-11)	.166(-11)	.155(-11)	.629(-12)
1	.607(-09)	.642(-13)	.570(-12)	.151(-11)	.150(-11)	.145(-11)	.141(-11)	.809(-12)
2	.580(-14)	.402(-12)	.564(-12)	.155(-11)	.212(-11)	.144(-11)	.129(-11)	.102(-11)
3		.606(-09)	.518(-12)	.152(-11)	.189(-11)	.195(-11)	.173(-11)	.805(-12)
4		.104(-12)	.174(-11)	.155(-11)	.296(-11)	.234(-11)	.174(-11)	.127(-11)
5		.153(-13)	.590(-09)	.207(-11)	.314(-11)	.304(-11)	.306(-11)	.179(-11)
6			.741(-12)	.462(-11)	.309(-11)	.352(-11)	.387(-11)	.283(-11)
7			.561(-13)	.542(-09)	.375(-11)	.318(-11)	.397(-11)	.334(-11)
8				.127(-11)	.720(-11)	.537(-11)	.451(-11)	.321(-11)
9				.120(-12)	.458(-09)	.558(-11)	.471(-11)	.339(-11)
10					.194(-11)	.992(-11)	.603(-11)	.548(-11)
11					.276(-12)	.841(-09)	.843(-11)	.760(-11)
12					.558(-13)	.350(-11)	.131(-10)	.707(-11)
13						.252(-12)	.134(-08)	.978(-11)
14						.978(-13)	.441(-11)	.132(-10)
15						.144(-13)	.629(-12)	.589(-09)
16						.351(-13)	.168(-13)	.498(-11)
17								.124(-11)
18								.183(-12)

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Table 155 D + D_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}= 300.								
v'	v 1	3	5	7	9	11	13	15
0	.314(-13)	.867(-12)	.245(-11)	.396(-11)	.416(-11)	.313(-11)	.239(-11)	.134(-11)
1	.784(-09)	.101(-11)	.282(-11)	.347(-11)	.447(-11)	.304(-11)	.272(-11)	.639(-12)
2	.586(-14)	.909(-12)	.319(-11)	.367(-11)	.538(-11)	.344(-11)	.230(-11)	.943(-12)
3		.772(-09)	.331(-11)	.485(-11)	.502(-11)	.391(-11)	.277(-11)	.214(-11)
4			.326(-11)	.489(-11)	.597(-11)	.502(-11)	.350(-11)	.223(-11)
5			.718(-09)	.635(-11)	.593(-11)	.560(-11)	.509(-11)	.245(-11)
6			.201(-13)	.695(-11)	.812(-11)	.697(-11)	.581(-11)	.312(-11)
7				.624(-09)	.109(-10)	.736(-11)	.559(-11)	.389(-11)
8				.293(-13)	.933(-11)	.968(-11)	.713(-11)	.410(-11)
9					.521(-09)	.123(-10)	.801(-11)	.699(-11)
10					.603(-13)	.109(-10)	.909(-11)	.768(-11)
11						.104(-08)	.142(-10)	.885(-11)
12						.132(-12)	.137(-10)	.117(-10)
13							.174(-08)	.147(-10)
14							.296(-12)	.152(-10)
15							.122(-13)	.629(-09)
16								.823(-12)
17								.173(-13)

Table 156 D + D_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}= 500.								
v'	v 1	3	5	7	9	11	13	15
0	.381(-13)	.846(-12)	.305(-11)	.303(-11)	.398(-11)	.293(-11)	.190(-11)	.106(-11)
1	.791(-09)	.918(-12)	.210(-11)	.379(-11)	.436(-11)	.348(-11)	.232(-11)	.182(-11)
2		.904(-12)	.234(-11)	.391(-11)	.546(-11)	.338(-11)	.254(-11)	.184(-11)
3		.781(-09)	.304(-11)	.409(-11)	.425(-11)	.355(-11)	.255(-11)	.144(-11)
4			.311(-11)	.469(-11)	.460(-11)	.416(-11)	.380(-11)	.303(-11)
5			.734(-09)	.457(-11)	.632(-11)	.456(-11)	.424(-11)	.302(-11)
6			.769(-14)	.662(-11)	.740(-11)	.725(-11)	.354(-11)	.478(-11)
7				.652(-09)	.866(-11)	.681(-11)	.542(-11)	.304(-11)
8				.328(-13)	.864(-11)	.933(-11)	.693(-11)	.481(-11)
9					.547(-09)	.101(-10)	.842(-11)	.556(-11)
10					.109(-12)	.155(-10)	.878(-11)	.787(-11)
11						.574(-09)	.137(-10)	.110(-10)
12						.237(-12)	.128(-10)	.119(-10)
13							.771(-09)	.186(-10)
14							.635(-12)	.124(-10)
15								.813(-09)
16								.167(-11)
17								.499(-13)

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Table 157 D + D_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}=1000.								
v'	v 1	3	5	7	9	11	13	15
0	.801(-14)	.450(-12)	.209(-11)	.364(-11)	.445(-11)	.259(-11)	.146(-11)	.121(-11)
1	.784(-09)	.660(-12)	.198(-11)	.313(-11)	.424(-11)	.346(-11)	.242(-11)	.664(-12)
2		.620(-12)	.155(-11)	.271(-11)	.480(-11)	.295(-11)	.297(-11)	.154(-11)
3		.777(-09)	.223(-11)	.351(-11)	.358(-11)	.441(-11)	.310(-11)	.106(-11)
4			.337(-11)	.332(-11)	.439(-11)	.467(-11)	.310(-11)	.184(-11)
5			.738(-09)	.490(-11)	.579(-11)	.477(-11)	.383(-11)	.257(-11)
6			.141(-12)	.511(-11)	.662(-11)	.652(-11)	.427(-11)	.292(-11)
7				.663(-09)	.773(-11)	.652(-11)	.549(-11)	.369(-11)
8				.997(-13)	.801(-11)	.885(-11)	.648(-11)	.559(-11)
9					.557(-09)	.106(-10)	.701(-11)	.713(-11)
10					.203(-12)	.137(-10)	.114(-10)	.788(-11)
11						.585(-09)	.104(-10)	.802(-11)
12						.870(-12)	.162(-10)	.114(-10)
13						.553(-13)	.772(-09)	.105(-10)
14							.123(-11)	.204(-10)
15							.207(-13)	.607(-09)
16								.246(-11)
17								.315(-12)
18								.000(-00)
19								.121(-13)

Table 158 D + D_2 LSTH NON REACTIVE T_{tr}= 500. T_{rot}=4000.								
v'	v 1	3	5	7	9	11	13	15
0	.258(-12)	.688(-12)	.169(-11)	.242(-11)	.312(-11)	.203(-11)	.115(-11)	.906(-12)
1	.784(-09)	.602(-12)	.161(-11)	.264(-11)	.297(-11)	.176(-11)	.214(-11)	.916(-12)
2	.133(-12)	.207(-11)	.181(-11)	.324(-11)	.364(-11)	.199(-11)	.281(-11)	.162(-11)
3	.000(-00)	.774(-09)	.204(-11)	.319(-11)	.349(-11)	.389(-11)	.288(-11)	.797(-12)
4	.000(-00)	.584(-12)	.509(-11)	.373(-11)	.452(-11)	.369(-11)	.264(-11)	.153(-11)
5	.104(-13)	.218(-13)	.734(-09)	.424(-11)	.474(-11)	.365(-11)	.217(-11)	.114(-11)
6			.131(-11)	.980(-11)	.512(-11)	.504(-11)	.440(-11)	.178(-11)
7			.120(-12)	.651(-09)	.703(-11)	.550(-11)	.501(-11)	.386(-11)
8			.283(-13)	.236(-11)	.118(-10)	.702(-11)	.542(-11)	.414(-11)
9				.156(-12)	.532(-09)	.761(-11)	.751(-11)	.405(-11)
10				.559(-13)	.323(-11)	.191(-10)	.986(-11)	.562(-11)
11					.687(-12)	.183(-08)	.109(-10)	.674(-11)
12					.451(-12)	.604(-11)	.196(-10)	.895(-11)
13						.103(-11)	.168(-08)	.112(-10)
14						.295(-12)	.684(-11)	.249(-10)
15							.828(-12)	.727(-09)
16							.357(-12)	.100(-10)
17							.270(-13)	.142(-11)
18								.365(-12)
19								.934(-13)

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Table 159 D + D_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}= 300.								
v'	v 1	3	5	7	9	11	13	15
0	.697(-12)	.310(-11)	.548(-11)	.675(-11)	.629(-11)	.642(-11)	.327(-11)	.257(-11)
1	.110(-08)	.338(-11)	.541(-11)	.686(-11)	.683(-11)	.497(-11)	.589(-11)	.151(-11)
2	.268(-13)	.406(-11)	.636(-11)	.782(-11)	.794(-11)	.507(-11)	.403(-11)	.174(-11)
3	.830(-14)	.105(-08)	.709(-11)	.693(-11)	.614(-11)	.725(-11)	.354(-11)	.237(-11)
4		.100(-12)	.760(-11)	.824(-11)	.895(-11)	.421(-11)	.428(-11)	.372(-11)
5		.103(-13)	.952(-09)	.919(-11)	.645(-11)	.675(-11)	.371(-11)	.405(-11)
6			.257(-12)	.125(-10)	.107(-10)	.967(-11)	.754(-11)	.408(-11)
7				.815(-09)	.104(-10)	.111(-10)	.621(-11)	.564(-11)
8				.346(-12)	.118(-10)	.113(-10)	.710(-11)	.560(-11)
9				.137(-13)	.674(-09)	.146(-10)	.128(-10)	.103(-10)
10					.720(-12)	.159(-10)	.124(-10)	.932(-11)
11					.144(-13)	.142(-08)	.168(-10)	.126(-10)
12						.108(-11)	.242(-10)	.133(-10)
13						.517(-13)	.241(-08)	.198(-10)
14							.117(-11)	.158(-10)
15							.570(-13)	.858(-09)
16							.244(-13)	.316(-11)
17								.241(-12)
18								.166(-12)

Table 160 D + D_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}= 500.								
v'	v 1	3	5	7	9	11	13	15
0	.645(-12)	.301(-11)	.578(-11)	.566(-11)	.668(-11)	.568(-11)	.365(-11)	.262(-11)
1	.110(-08)	.262(-11)	.588(-11)	.544(-11)	.601(-11)	.570(-11)	.416(-11)	.231(-11)
2	.958(-13)	.422(-11)	.491(-11)	.681(-11)	.721(-11)	.402(-11)	.331(-11)	.225(-11)
3		.105(-08)	.677(-11)	.728(-11)	.531(-11)	.673(-11)	.414(-11)	.294(-11)
4		.157(-12)	.669(-11)	.829(-11)	.889(-11)	.775(-11)	.386(-11)	.236(-11)
5		.103(-13)	.963(-09)	.922(-11)	.628(-11)	.738(-11)	.611(-11)	.384(-11)
6			.275(-12)	.991(-11)	.130(-10)	.864(-11)	.642(-11)	.508(-11)
7				.831(-09)	.103(-10)	.844(-11)	.917(-11)	.409(-11)
8				.515(-12)	.122(-10)	.750(-11)	.908(-11)	.535(-11)
9					.687(-09)	.152(-10)	.892(-11)	.705(-11)
10					.841(-12)	.149(-10)	.126(-10)	.832(-11)
11					.591(-13)	.144(-08)	.146(-10)	.123(-10)
12						.147(-11)	.212(-10)	.177(-10)
13						.458(-13)	.242(-08)	.177(-10)
14							.162(-11)	.231(-10)
15							.960(-13)	.857(-09)
16							.435(-13)	.362(-11)
17								.487(-12)
18								.186(-12)
19								.316(-13)

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Table 161 D + D_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}=1000.								
v'	v 1	3	5	7	9	11	13	15
0	.726(-12)	.268(-11)	.481(-11)	.602(-11)	.545(-11)	.543(-11)	.285(-11)	.321(-11)
1	.111(-08)	.280(-11)	.443(-11)	.550(-11)	.649(-11)	.430(-11)	.396(-11)	.153(-11)
2	.861(-13)	.365(-11)	.512(-11)	.680(-11)	.687(-11)	.525(-11)	.443(-11)	.296(-11)
3		.107(-08)	.570(-11)	.754(-11)	.511(-11)	.588(-11)	.386(-11)	.318(-11)
4		.356(-12)	.885(-11)	.561(-11)	.782(-11)	.627(-11)	.402(-11)	.330(-11)
5			.985(-09)	.776(-11)	.712(-11)	.961(-11)	.449(-11)	.325(-11)
6			.412(-12)	.962(-11)	.103(-10)	.675(-11)	.616(-11)	.376(-11)
7			.312(-13)	.862(-09)	.100(-10)	.864(-11)	.715(-11)	.489(-11)
8				.932(-12)	.136(-10)	.102(-10)	.729(-11)	.631(-11)
9					.716(-09)	.101(-10)	.912(-11)	.104(-10)
10					.146(-11)	.160(-10)	.103(-10)	.101(-10)
11					.123(-12)	.765(-09)	.184(-10)	.103(-10)
12						.203(-11)	.185(-10)	.152(-10)
13						.121(-12)	.104(-08)	.155(-10)
14						.143(-13)	.268(-11)	.279(-10)
15							.370(-12)	.107(-08)
16							.171(-12)	.681(-11)
17								.967(-12)
18								.243(-12)
19								.104(-12)

Table 162 D + D_2 LSTH NON REACTIVE T_{tr}=1000. T_{rot}=4000.								
v'	v 1	3	5	7	9	11	13	15
0	.280(-11)	.292(-11)	.430(-11)	.634(-11)	.394(-11)	.549(-11)	.289(-11)	.108(-11)
1	.110(-08)	.259(-11)	.394(-11)	.569(-11)	.546(-11)	.358(-11)	.188(-11)	.322(-11)
2	.756(-12)	.774(-11)	.396(-11)	.547(-11)	.482(-11)	.417(-11)	.232(-11)	.249(-11)
3	.791(-13)	.105(-08)	.594(-11)	.641(-11)	.546(-11)	.337(-11)	.294(-11)	.247(-11)
4		.237(-11)	.140(-10)	.713(-11)	.788(-11)	.537(-11)	.272(-11)	.264(-11)
5		.203(-12)	.960(-09)	.102(-10)	.777(-11)	.608(-11)	.340(-11)	.305(-11)
6			.517(-11)	.182(-10)	.103(-10)	.758(-11)	.518(-11)	.437(-11)
7			.438(-12)	.817(-09)	.958(-11)	.103(-10)	.697(-11)	.456(-11)
8			.189(-12)	.628(-11)	.220(-10)	.956(-11)	.801(-11)	.311(-11)
9			.329(-13)	.806(-12)	.671(-09)	.129(-10)	.996(-11)	.600(-11)
10				.123(-12)	.100(-10)	.284(-10)	.101(-10)	.673(-11)
11					.707(-12)	.138(-08)	.133(-10)	.952(-11)
12					.329(-12)	.123(-10)	.310(-10)	.124(-10)
13					.475(-13)	.180(-11)	.735(-09)	.197(-10)
14					.000(-00)	.312(-12)	.161(-10)	.444(-10)
15					.611(-13)	.239(-12)	.313(-11)	.978(-09)
16						.606(-13)	.133(-11)	.169(-10)
17							.701(-13)	.390(-11)
18							.371(-13)	.147(-11)
19							.800(-13)	.273(-12)
20								.409(-13)

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Table 163 D + D_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}= 300.

v'	v 1	3	5	7	9	11	13	15
0	.169(-10)	.159(-10)	.168(-10)	.151(-10)	.123(-10)	.103(-10)	.130(-10)	.506(-11)
1	.209(-08)	.143(-10)	.134(-10)	.189(-10)	.127(-10)	.118(-10)	.997(-11)	.587(-11)
2	.569(-11)	.252(-10)	.172(-10)	.126(-10)	.137(-10)	.124(-10)	.707(-11)	.551(-11)
3	.141(-11)	.192(-08)	.173(-10)	.148(-10)	.144(-10)	.135(-10)	.116(-10)	.614(-11)
4	.353(-12)	.756(-11)	.264(-10)	.140(-10)	.990(-11)	.101(-10)	.802(-11)	.651(-11)
5	.298(-13)	.134(-11)	.170(-08)	.167(-10)	.103(-10)	.927(-11)	.788(-11)	.476(-11)
6	.000(-00)	.240(-12)	.682(-11)	.315(-10)	.202(-10)	.895(-11)	.109(-10)	.621(-11)
7	.000(-00)	.202(-12)	.166(-11)	.148(-08)	.213(-10)	.143(-10)	.146(-10)	.944(-11)
8	.183(-13)	.641(-13)	.780(-12)	.954(-11)	.316(-10)	.227(-10)	.102(-10)	.129(-10)
9		.206(-13)	.165(-12)	.121(-11)	.126(-08)	.202(-10)	.150(-10)	.139(-10)
10			.449(-13)	.686(-12)	.109(-10)	.375(-10)	.153(-10)	.109(-10)
11			.288(-13)	.358(-12)	.322(-11)	.143(-08)	.261(-10)	.128(-10)
12				.572(-13)	.970(-12)	.147(-10)	.464(-10)	.240(-10)
13				.000(-00)	.261(-12)	.400(-11)	.486(-08)	.345(-10)
14				.296(-13)	.183(-12)	.125(-11)	.179(-10)	.604(-10)
15					.000(-00)	.518(-12)	.545(-11)	.231(-08)
16					.402(-13)	.195(-12)	.195(-11)	.284(-10)
17						.130(-12)	.484(-12)	.640(-11)
18						.735(-13)	.392(-12)	.320(-11)
19							.115(-12)	.170(-11)
20								.391(-12)

Table 164 D + D_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}= 500.

v'	v 1	3	5	7	9	11	13	15
0	.157(-10)	.160(-10)	.168(-10)	.146(-10)	.126(-10)	.912(-11)	.930(-11)	.194(-11)
1	.212(-08)	.151(-10)	.105(-10)	.119(-10)	.131(-10)	.112(-10)	.967(-11)	.220(-11)
2	.753(-11)	.244(-10)	.169(-10)	.159(-10)	.156(-10)	.107(-10)	.793(-11)	.271(-11)
3	.104(-11)	.194(-08)	.172(-10)	.115(-10)	.117(-10)	.107(-10)	.830(-11)	.147(-11)
4	.412(-12)	.815(-11)	.228(-10)	.147(-10)	.120(-10)	.999(-11)	.985(-11)	.278(-11)
5	.162(-12)	.185(-11)	.173(-08)	.200(-10)	.144(-10)	.119(-10)	.866(-11)	.267(-11)
6	.802(-13)	.376(-12)	.105(-10)	.276(-10)	.230(-10)	.129(-10)	.901(-11)	.252(-11)
7		.540(-13)	.128(-11)	.152(-08)	.208(-10)	.158(-10)	.125(-10)	.332(-11)
8		.628(-13)	.897(-12)	.891(-11)	.344(-10)	.196(-10)	.149(-10)	.301(-11)
9		.226(-13)	.425(-13)	.189(-11)	.128(-08)	.246(-10)	.116(-10)	.505(-11)
10		.279(-13)	.138(-12)	.950(-12)	.127(-10)	.358(-10)	.186(-10)	.747(-11)
11			.599(-13)	.269(-12)	.349(-11)	.103(-08)	.247(-10)	.982(-11)
12				.437(-13)	.109(-11)	.169(-10)	.419(-10)	.942(-11)
13				.401(-13)	.473(-12)	.351(-11)	.486(-08)	.107(-10)
14				.401(-13)	.113(-12)	.164(-11)	.235(-10)	.173(-10)
15					.672(-13)	.567(-12)	.466(-11)	.209(-10)
16					.000(-00)	.251(-12)	.166(-11)	.253(-10)
17					.350(-13)	.000(-00)	.450(-12)	.482(-10)
18						.465(-13)	.285(-12)	.972(-10)
19							.165(-12)	.329(-08)
20								.409(-10)

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Table 165 D + D_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}=1000.

v'	v 1	3	5	7	9	11	13	15
0	.175(-10)	.149(-10)	.133(-10)	.128(-10)	.121(-10)	.122(-10)	.922(-11)	.630(-11)
1	.209(-08)	.167(-10)	.148(-10)	.176(-10)	.136(-10)	.991(-11)	.774(-11)	.519(-11)
2	.694(-11)	.273(-10)	.151(-10)	.127(-10)	.989(-11)	.123(-10)	.858(-11)	.428(-11)
3	.111(-11)	.192(-08)	.164(-10)	.131(-10)	.130(-10)	.122(-10)	.720(-11)	.489(-11)
4	.491(-12)	.964(-11)	.306(-10)	.142(-10)	.110(-10)	.139(-10)	.548(-11)	.448(-11)
5	.152(-12)	.192(-11)	.171(-08)	.183(-10)	.103(-10)	.989(-11)	.968(-11)	.103(-10)
6	.115(-12)	.192(-12)	.112(-10)	.367(-10)	.162(-10)	.965(-11)	.115(-10)	.424(-11)
7	.000(-00)	.245(-12)	.177(-11)	.148(-08)	.194(-10)	.154(-10)	.111(-10)	.876(-11)
8	.000(-00)	.360(-13)	.657(-12)	.137(-10)	.457(-10)	.180(-10)	.145(-10)	.766(-11)
9	.000(-00)	.000(-00)	.867(-13)	.252(-11)	.127(-08)	.211(-10)	.187(-10)	.115(-10)
10	.166(-13)	.252(-13)	.858(-13)	.882(-12)	.170(-10)	.481(-10)	.196(-10)	.165(-10)
11		.183(-13)	.124(-12)	.136(-12)	.357(-11)	.279(-08)	.279(-10)	.211(-10)
12				.892(-13)	.138(-11)	.241(-10)	.564(-10)	.277(-10)
13				.362(-13)	.398(-12)	.390(-11)	.484(-08)	.391(-10)
14				.364(-13)	.189(-12)	.142(-11)	.280(-10)	.664(-10)
15					.467(-13)	.400(-12)	.576(-11)	.224(-08)
16					.000(-00)	.339(-12)	.314(-11)	.350(-10)
17					.452(-13)	.000(-00)	.187(-11)	.115(-10)
18						.113(-12)	.562(-12)	.256(-11)
19						.640(-13)	.114(-12)	.120(-11)
20							.991(-13)	.233(-12)

Table 166 D + D_2 LSTH NON REACTIVE T_{tr}=4000. T_{rot}=4000.

v'	v 1	3	5	7	9	11	13	15
0	.259(-10)	.140(-10)	.137(-10)	.110(-10)	.109(-10)	.967(-11)	.106(-10)	.314(-11)
1	.207(-08)	.174(-10)	.157(-10)	.136(-10)	.103(-10)	.689(-11)	.596(-11)	.359(-11)
2	.138(-10)	.453(-10)	.140(-10)	.144(-10)	.123(-10)	.689(-11)	.710(-11)	.422(-11)
3	.238(-11)	.188(-08)	.254(-10)	.145(-10)	.143(-10)	.792(-11)	.485(-11)	.506(-11)
4	.129(-11)	.191(-10)	.481(-10)	.138(-10)	.132(-10)	.759(-11)	.810(-11)	.546(-11)
5	.276(-12)	.331(-11)	.165(-08)	.250(-10)	.180(-10)	.106(-10)	.741(-11)	.575(-11)
6	.216(-12)	.631(-12)	.268(-10)	.583(-10)	.196(-10)	.119(-10)	.103(-10)	.572(-11)
7	.154(-12)	.849(-12)	.549(-11)	.141(-08)	.205(-10)	.139(-10)	.113(-10)	.964(-11)
8	.561(-13)	.187(-12)	.146(-11)	.379(-10)	.698(-10)	.164(-10)	.105(-10)	.969(-11)
9		.146(-12)	.573(-12)	.710(-11)	.115(-08)	.356(-10)	.141(-10)	.981(-11)
10		.133(-12)	.274(-12)	.233(-11)	.446(-10)	.846(-10)	.166(-10)	.131(-10)
11		.534(-13)	.241(-13)	.950(-12)	.641(-11)	.127(-08)	.368(-10)	.208(-10)
12		.245(-13)	.451(-13)	.439(-12)	.349(-11)	.519(-10)	.766(-10)	.189(-10)
13				.178(-12)	.122(-11)	.947(-11)	.143(-08)	.372(-10)
14				.180(-12)	.749(-12)	.443(-11)	.487(-10)	.822(-10)
15				.111(-12)	.637(-13)	.210(-11)	.126(-10)	.210(-08)
16				.475(-13)	.109(-12)	.124(-11)	.443(-11)	.443(-10)
17				.000(-00)	.000(-00)	.647(-12)	.165(-11)	.149(-10)
18				.573(-13)	.000(-00)	.382(-13)	.701(-12)	.542(-11)
19					.383(-13)	.515(-13)	.105(-11)	.170(-11)
20						.222(-12)		.628(-12)

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Table 167 D + D_2 LSTH REACTIVE T_{tr}= 300. T_{rot}= 300.								
v'	v 1	3	5	7	9	11	13	15
0	.499(-14)	.347(-12)	.168(-11)	.355(-11)	.361(-11)	.362(-11)	.215(-11)	.203(-11)
1	.000(-00)	.340(-12)	.213(-11)	.325(-11)	.321(-11)	.261(-11)	.239(-11)	.158(-11)
2		.479(-12)	.245(-11)	.308(-11)	.415(-11)	.358(-11)	.295(-11)	.259(-11)
3		.720(-12)	.334(-11)	.575(-11)	.478(-11)	.412(-11)	.308(-11)	.265(-11)
4			.626(-11)	.626(-11)	.666(-11)	.562(-11)	.481(-11)	.338(-11)
5			.538(-11)	.119(-10)	.105(-10)	.710(-11)	.569(-11)	.333(-11)
6			.730(-14)	.184(-10)	.161(-10)	.111(-10)	.659(-11)	.549(-11)
7				.134(-10)	.188(-10)	.141(-10)	.107(-10)	.637(-11)
8				.679(-14)	.357(-10)	.214(-10)	.139(-10)	.893(-11)
9					.242(-10)	.288(-10)	.197(-10)	.134(-10)
10					.553(-13)	.530(-10)	.301(-10)	.163(-10)
11						.402(-10)	.405(-10)	.311(-10)
12						.761(-13)	.760(-10)	.422(-10)
13							.523(-10)	.635(-10)
14							.303(-12)	.879(-10)
15								.732(-10)
16								.126(-11)

Table 168 D + D_2 LSTH REACTIVE T_{tr}= 300. T_{rot}= 500.								
v'	v 1	3	5	7	9	11	13	15
0	.484(-14)	.163(-12)	.142(-11)	.238(-11)	.339(-11)	.280(-11)	.292(-11)	.318(-13)
1	.156(-13)	.256(-12)	.157(-11)	.227(-11)	.346(-11)	.268(-11)	.270(-11)	.320(-12)
2		.492(-12)	.192(-11)	.330(-11)	.329(-11)	.282(-11)	.251(-11)	.331(-12)
3		.397(-12)	.258(-11)	.438(-11)	.431(-11)	.405(-11)	.354(-11)	.255(-12)
4			.454(-11)	.652(-11)	.654(-11)	.433(-11)	.388(-11)	.273(-12)
5			.374(-11)	.946(-11)	.101(-10)	.605(-11)	.665(-11)	.310(-12)
6			.116(-13)	.150(-10)	.117(-10)	.950(-11)	.759(-11)	.743(-12)
7				.105(-10)	.166(-10)	.152(-10)	.113(-10)	.175(-11)
8				.425(-13)	.291(-10)	.195(-10)	.131(-10)	.194(-11)
9					.226(-10)	.256(-10)	.199(-10)	.280(-11)
10					.115(-12)	.451(-10)	.272(-10)	.294(-11)
11						.370(-10)	.401(-10)	.580(-11)
12						.744(-12)	.610(-10)	.734(-11)
13							.549(-10)	.128(-10)
14							.213(-11)	.227(-10)
15								.351(-10)
16								.562(-10)
17								.102(-09)
18								.194(-09)
19								.193(-09)
20								.369(-10)

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Table 169 D + D_2 LSTH REACTIVE T_{tr}= 300. T_{rot}=1000.								
v'	v 1	3	5	7	9	11	13	15
0	.000(-00)	.146(-12)	.744(-12)	.202(-11)	.299(-11)	.301(-11)	.280(-11)	.137(-11)
1	.552(-14)	.195(-12)	.147(-11)	.193(-11)	.284(-11)	.235(-11)	.229(-11)	.128(-11)
2		.304(-12)	.159(-11)	.256(-11)	.293(-11)	.316(-11)	.287(-11)	.196(-11)
3		.347(-12)	.185(-11)	.338(-11)	.478(-11)	.438(-11)	.375(-11)	.286(-11)
4		.565(-14)	.298(-11)	.540(-11)	.512(-11)	.456(-11)	.342(-11)	.290(-11)
5			.276(-11)	.706(-11)	.796(-11)	.675(-11)	.651(-11)	.336(-11)
6			.186(-12)	.123(-10)	.874(-11)	.897(-11)	.613(-11)	.476(-11)
7				.994(-11)	.141(-10)	.122(-10)	.878(-11)	.636(-11)
8				.642(-12)	.247(-10)	.163(-10)	.151(-10)	.848(-11)
9					.223(-10)	.251(-10)	.170(-10)	.108(-10)
10					.152(-11)	.400(-10)	.248(-10)	.175(-10)
11					.286(-13)	.394(-10)	.364(-10)	.244(-10)
12						.397(-11)	.587(-10)	.379(-10)
13						.391(-13)	.605(-10)	.645(-10)
14							.803(-11)	.824(-10)
15							.546(-12)	.903(-10)
16							.139(-13)	.195(-10)
17								.274(-11)
18								.490(-12)
19								.186(-13)

Table 170 D + D_2 LSTH REACTIVE T_{tr}= 300. T_{rot}=4000.								
v'	v 1	3	5	7	9	11	13	15
0	.130(-13)	.116(-12)	.883(-12)	.190(-11)	.311(-11)	.224(-11)	.184(-11)	.128(-11)
1	.245(-13)	.187(-12)	.833(-12)	.180(-11)	.297(-11)	.259(-11)	.173(-11)	.835(-12)
2	.196(-13)	.256(-12)	.962(-12)	.190(-11)	.263(-11)	.320(-11)	.241(-11)	.237(-11)
3	.111(-13)	.273(-12)	.117(-11)	.280(-11)	.309(-11)	.331(-11)	.343(-11)	.102(-11)
4	.808(-14)	.259(-12)	.208(-11)	.343(-11)	.499(-11)	.454(-11)	.375(-11)	.247(-11)
5		.920(-13)	.240(-11)	.440(-11)	.736(-11)	.647(-11)	.406(-11)	.313(-11)
6		.124(-12)	.236(-11)	.859(-11)	.673(-11)	.865(-11)	.705(-11)	.382(-11)
7			.139(-11)	.105(-10)	.121(-10)	.933(-11)	.701(-11)	.567(-11)
8			.483(-12)	.867(-11)	.198(-10)	.149(-10)	.102(-10)	.791(-11)
9				.441(-11)	.251(-10)	.203(-10)	.172(-10)	.942(-11)
10				.146(-11)	.183(-10)	.340(-10)	.225(-10)	.144(-10)
11				.389(-12)	.888(-11)	.446(-10)	.328(-10)	.216(-10)
12					.396(-11)	.281(-10)	.476(-10)	.305(-10)
13					.102(-11)	.170(-10)	.674(-10)	.499(-10)
14					.544(-13)	.868(-11)	.470(-10)	.717(-10)
15						.270(-11)	.297(-10)	.103(-09)
16						.802(-13)	.131(-10)	.694(-10)
17							.177(-11)	.341(-10)
18							.942(-13)	.838(-11)
19								.446(-12)
20								.410(-13)

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Table 171 D + D_2 LSTH REACTIVE T_{tr}= 500. T_{rot}= 300.								
v'	v 1	3	5	7	9	11	13	15
0	.101(-12)	.138(-11)	.343(-11)	.457(-11)	.440(-11)	.573(-11)	.389(-11)	.213(-11)
1	.207(-12)	.192(-11)	.437(-11)	.539(-11)	.662(-11)	.554(-11)	.372(-11)	.328(-11)
2		.348(-11)	.572(-11)	.777(-11)	.740(-11)	.667(-11)	.509(-11)	.345(-11)
3		.268(-11)	.825(-11)	.979(-11)	.924(-11)	.659(-11)	.558(-11)	.342(-11)
4		.146(-13)	.160(-10)	.132(-10)	.123(-10)	.837(-11)	.721(-11)	.466(-11)
5			.132(-10)	.244(-10)	.162(-10)	.113(-10)	.100(-10)	.719(-11)
6			.324(-13)	.365(-10)	.240(-10)	.174(-10)	.137(-10)	.766(-11)
7				.244(-10)	.352(-10)	.243(-10)	.159(-10)	.106(-10)
8				.131(-12)	.537(-10)	.367(-10)	.234(-10)	.171(-10)
9					.345(-10)	.502(-10)	.335(-10)	.228(-10)
10					.231(-12)	.764(-10)	.463(-10)	.282(-10)
11						.453(-10)	.661(-10)	.411(-10)
12						.744(-12)	.977(-10)	.637(-10)
13							.617(-10)	.881(-10)
14							.115(-11)	.132(-09)
15								.844(-10)
16								.326(-11)
17								.372(-13)

Table 172 D + D_2 LSTH REACTIVE T_{tr}= 500. T_{rot}= 500.								
v'	v 1	3	5	7	9	11	13	15
0	.856(-13)	.120(-11)	.337(-11)	.362(-11)	.557(-11)	.500(-11)	.398(-11)	.237(-11)
1	.142(-12)	.135(-11)	.369(-11)	.485(-11)	.589(-11)	.576(-11)	.289(-11)	.259(-11)
2		.266(-11)	.572(-11)	.659(-11)	.704(-11)	.563(-11)	.293(-11)	.278(-11)
3		.247(-11)	.686(-11)	.861(-11)	.806(-11)	.633(-11)	.520(-11)	.259(-11)
4		.276(-13)	.133(-10)	.140(-10)	.113(-10)	.829(-11)	.712(-11)	.449(-11)
5			.112(-10)	.180(-10)	.149(-10)	.117(-10)	.976(-11)	.759(-11)
6			.635(-13)	.300(-10)	.210(-10)	.176(-10)	.127(-10)	.978(-11)
7				.223(-10)	.301(-10)	.245(-10)	.159(-10)	.106(-10)
8				.356(-12)	.501(-10)	.326(-10)	.254(-10)	.148(-10)
9					.355(-10)	.448(-10)	.343(-10)	.198(-10)
10					.588(-12)	.682(-10)	.465(-10)	.291(-10)
11						.499(-10)	.657(-10)	.416(-10)
12						.114(-11)	.906(-10)	.571(-10)
13							.653(-10)	.838(-10)
14							.260(-11)	.121(-09)
15							.357(-13)	.955(-10)
16								.709(-11)
17								.126(-12)
18								.165(-13)

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Table 173 D + D_2 LSTH REACTIVE T_{tr}= 500. T_{rot}=1000.								
v'	v 1	3	5	7	9	11	13	15
0	.752(-13)	.979(-12)	.295(-11)	.505(-11)	.456(-11)	.391(-11)	.301(-11)	.208(-11)
1	.166(-12)	.110(-11)	.348(-11)	.372(-11)	.442(-11)	.418(-11)	.369(-11)	.246(-11)
2		.191(-11)	.388(-11)	.577(-11)	.497(-11)	.442(-11)	.412(-11)	.278(-11)
3		.189(-11)	.535(-11)	.655(-11)	.634(-11)	.662(-11)	.588(-11)	.333(-11)
4		.791(-13)	.105(-10)	.102(-10)	.100(-10)	.729(-11)	.598(-11)	.534(-11)
5			.843(-11)	.144(-10)	.137(-10)	.133(-10)	.103(-10)	.715(-11)
6			.467(-12)	.256(-10)	.189(-10)	.138(-10)	.123(-10)	.882(-11)
7				.223(-10)	.278(-10)	.202(-10)	.177(-10)	.982(-11)
8				.171(-11)	.430(-10)	.317(-10)	.193(-10)	.134(-10)
9					.400(-10)	.391(-10)	.294(-10)	.189(-10)
10					.367(-11)	.674(-10)	.412(-10)	.315(-10)
11					.717(-13)	.533(-10)	.610(-10)	.380(-10)
12						.625(-11)	.869(-10)	.558(-10)
13						.266(-12)	.736(-10)	.856(-10)
14						.112(-12)	.120(-10)	.119(-09)
15							.152(-11)	.107(-09)
16							.604(-13)	.274(-10)
17								.350(-11)
18								.574(-12)
19								.330(-13)

Table 174 D + D_2 LSTH REACTIVE T_{tr}= 500. T_{rot}=4000.								
v'	v 1	3	5	7	9	11	13	15
0	.754(-13)	.493(-12)	.243(-11)	.391(-11)	.406(-11)	.336(-11)	.264(-11)	.140(-11)
1	.110(-12)	.879(-12)	.216(-11)	.416(-11)	.503(-11)	.396(-11)	.322(-11)	.276(-11)
2	.414(-13)	.131(-11)	.247(-11)	.309(-11)	.454(-11)	.438(-11)	.295(-11)	.164(-11)
3	.817(-13)	.167(-11)	.350(-11)	.476(-11)	.730(-11)	.603(-11)	.561(-11)	.257(-11)
4	.138(-13)	.106(-11)	.625(-11)	.688(-11)	.783(-11)	.718(-11)	.393(-11)	.353(-11)
5	.160(-13)	.522(-12)	.917(-11)	.999(-11)	.973(-11)	.961(-11)	.651(-11)	.548(-11)
6		.271(-12)	.639(-11)	.199(-10)	.142(-10)	.139(-10)	.995(-11)	.673(-11)
7			.337(-11)	.241(-10)	.227(-10)	.180(-10)	.118(-10)	.993(-11)
8			.109(-11)	.156(-10)	.340(-10)	.245(-10)	.167(-10)	.139(-10)
9			.937(-13)	.642(-11)	.440(-10)	.360(-10)	.244(-10)	.180(-10)
10			.138(-13)	.211(-11)	.287(-10)	.550(-10)	.336(-10)	.237(-10)
11				.675(-12)	.129(-10)	.638(-10)	.517(-10)	.291(-10)
12					.459(-11)	.425(-10)	.767(-10)	.535(-10)
13					.134(-11)	.237(-10)	.891(-10)	.746(-10)
14					.121(-12)	.103(-10)	.604(-10)	.103(-09)
15						.214(-11)	.368(-10)	.121(-09)
16						.100(-12)	.146(-10)	.758(-10)
17							.207(-11)	.406(-10)
18							.147(-12)	.101(-10)
19							.851(-13)	.124(-11)
20								.934(-13)

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Table 175 D + D_2 LSTH REACTIVE T_{tr}=1000. T_{rot}= 300.								
v'	v 1	3	5	7	9	11	13	15
0	.154(-11)	.527(-11)	.988(-11)	.843(-11)	.973(-11)	.744(-11)	.805(-11)	.328(-11)
1	.331(-11)	.731(-11)	.108(-10)	.133(-10)	.106(-10)	.744(-11)	.585(-11)	.403(-11)
2	.101(-12)	.151(-10)	.146(-10)	.171(-10)	.172(-10)	.843(-11)	.831(-11)	.739(-11)
3	.943(-14)	.141(-10)	.251(-10)	.200(-10)	.183(-10)	.125(-10)	.983(-11)	.517(-11)
4		.345(-12)	.355(-10)	.309(-10)	.241(-10)	.176(-10)	.124(-10)	.112(-10)
5			.283(-10)	.428(-10)	.299(-10)	.245(-10)	.169(-10)	.149(-10)
6			.794(-12)	.643(-10)	.450(-10)	.346(-10)	.256(-10)	.159(-10)
7			.949(-14)	.374(-10)	.605(-10)	.480(-10)	.323(-10)	.253(-10)
8				.133(-11)	.908(-10)	.623(-10)	.468(-10)	.348(-10)
9				.628(-13)	.508(-10)	.854(-10)	.586(-10)	.416(-10)
10					.173(-11)	.102(-09)	.819(-10)	.576(-10)
11					.108(-12)	.647(-10)	.107(-09)	.745(-10)
12					.189(-13)	.373(-11)	.120(-09)	.103(-09)
13						.149(-12)	.816(-10)	.129(-09)
14						.137(-13)	.630(-11)	.148(-09)
15							.648(-12)	.880(-10)
16							.381(-13)	.119(-10)
17								.116(-11)
18								.381(-12)
19								.919(-13)

Table 176 D + D_2 LSTH REACTIVE T_{tr}=1000. T_{rot}= 500.								
v'	v 1	3	5	7	9	11	13	15
0	.152(-11)	.497(-11)	.836(-11)	.989(-11)	.780(-11)	.901(-11)	.574(-11)	.392(-11)
1	.304(-11)	.756(-11)	.988(-11)	.133(-10)	.100(-10)	.754(-11)	.600(-11)	.412(-11)
2	.113(-12)	.153(-10)	.141(-10)	.140(-10)	.146(-10)	.941(-11)	.737(-11)	.515(-11)
3	.830(-14)	.125(-10)	.215(-10)	.195(-10)	.181(-10)	.127(-10)	.961(-11)	.920(-11)
4		.335(-12)	.336(-10)	.271(-10)	.220(-10)	.170(-10)	.141(-10)	.106(-10)
5		.329(-13)	.276(-10)	.418(-10)	.294(-10)	.225(-10)	.177(-10)	.123(-10)
6			.920(-12)	.607(-10)	.426(-10)	.317(-10)	.229(-10)	.182(-10)
7				.372(-10)	.600(-10)	.442(-10)	.345(-10)	.222(-10)
8				.171(-11)	.846(-10)	.580(-10)	.421(-10)	.306(-10)
9				.549(-13)	.528(-10)	.818(-10)	.602(-10)	.385(-10)
10				.943(-14)	.291(-11)	.985(-10)	.803(-10)	.550(-10)
11					.137(-12)	.654(-10)	.101(-09)	.821(-10)
12					.830(-14)	.679(-11)	.119(-09)	.967(-10)
13						.239(-12)	.817(-10)	.118(-09)
14							.102(-10)	.141(-09)
15							.672(-12)	.104(-09)
16							.473(-13)	.175(-10)
17							.163(-13)	.226(-11)
18								.435(-12)
19								.457(-13)
20								.208(-13)

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Table 177 D + D_2 LSTH REACTIVE T_{tr}=1000. T_{rot}=1000.

v'	v 1	3	5	7	9	11	13	15
0	.121(-11)	.447(-11)	.676(-11)	.712(-11)	.918(-11)	.826(-11)	.547(-11)	.301(-11)
1	.269(-11)	.695(-11)	.760(-11)	.110(-10)	.877(-11)	.734(-11)	.649(-11)	.305(-11)
2	.303(-12)	.121(-10)	.118(-10)	.118(-10)	.112(-10)	.102(-10)	.690(-11)	.710(-11)
3		.113(-10)	.181(-10)	.154(-10)	.151(-10)	.107(-10)	.811(-11)	.673(-11)
4		.819(-12)	.312(-10)	.246(-10)	.234(-10)	.184(-10)	.120(-10)	.791(-11)
5		.268(-13)	.271(-10)	.357(-10)	.256(-10)	.194(-10)	.153(-10)	.104(-10)
6			.204(-11)	.563(-10)	.373(-10)	.338(-10)	.205(-10)	.156(-10)
7			.622(-13)	.413(-10)	.547(-10)	.391(-10)	.315(-10)	.230(-10)
8				.405(-11)	.782(-10)	.544(-10)	.420(-10)	.302(-10)
9				.221(-12)	.579(-10)	.753(-10)	.584(-10)	.344(-10)
10					.676(-11)	.936(-10)	.730(-10)	.508(-10)
11					.314(-12)	.704(-10)	.959(-10)	.677(-10)
12					.192(-13)	.131(-10)	.108(-09)	.977(-10)
13						.137(-11)	.983(-10)	.117(-09)
14							.162(-10)	.149(-09)
15							.162(-11)	.118(-09)
16							.270(-12)	.344(-10)
17							.341(-13)	.712(-11)
18								.181(-11)
19								.495(-12)
20								.867(-13)

Table 178 D + D_2 LSTH REACTIVE T_{tr}=1000. T_{rot}=4000.

v'	v 1	3	5	7	9	11	13	15
0	.127(-11)	.340(-11)	.641(-11)	.846(-11)	.669(-11)	.709(-11)	.412(-11)	.303(-11)
1	.258(-11)	.477(-11)	.716(-11)	.849(-11)	.744(-11)	.609(-11)	.621(-11)	.327(-11)
2	.118(-11)	.815(-11)	.928(-11)	.109(-10)	.758(-11)	.686(-11)	.642(-11)	.291(-11)
3	.292(-12)	.122(-10)	.144(-10)	.139(-10)	.111(-10)	.106(-10)	.789(-11)	.456(-11)
4		.633(-11)	.233(-10)	.177(-10)	.155(-10)	.137(-10)	.105(-10)	.542(-11)
5		.255(-11)	.273(-10)	.280(-10)	.244(-10)	.167(-10)	.145(-10)	.100(-10)
6		.649(-12)	.154(-10)	.428(-10)	.330(-10)	.240(-10)	.190(-10)	.134(-10)
7		.987(-13)	.605(-11)	.485(-10)	.466(-10)	.369(-10)	.252(-10)	.140(-10)
8			.194(-11)	.319(-10)	.637(-10)	.470(-10)	.358(-10)	.221(-10)
9			.127(-12)	.119(-10)	.681(-10)	.696(-10)	.497(-10)	.305(-10)
10			.602(-13)	.342(-11)	.390(-10)	.822(-10)	.611(-10)	.459(-10)
11			.126(-13)	.223(-12)	.175(-10)	.870(-10)	.860(-10)	.619(-10)
12			.103(-13)	.498(-13)	.698(-11)	.522(-10)	.115(-09)	.887(-10)
13				.126(-13)	.170(-11)	.289(-10)	.106(-09)	.112(-09)
14					.247(-12)	.141(-10)	.558(-10)	.132(-09)
15						.403(-11)	.386(-10)	.138(-09)
16						.650(-12)	.153(-10)	.873(-10)
17						.151(-12)	.296(-11)	.397(-10)
18						.855(-13)	.560(-12)	.173(-10)
19							.348(-12)	.304(-11)
20							.291(-13)	.466(-12)

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Table 179 D + D_2 LSTH REACTIVE T_{tr}=4000. T_{rot}= 300.								
v'	v 1	3	5	7	9	11	13	15
0	.451(-10)	.384(-10)	.376(-10)	.324(-10)	.309(-10)	.259(-10)	.168(-10)	.160(-10)
1	.410(-10)	.568(-10)	.546(-10)	.397(-10)	.357(-10)	.327(-10)	.275(-10)	.181(-10)
2	.732(-11)	.715(-10)	.717(-10)	.615(-10)	.492(-10)	.437(-10)	.312(-10)	.221(-10)
3	.220(-11)	.505(-10)	.823(-10)	.771(-10)	.626(-10)	.551(-10)	.404(-10)	.288(-10)
4	.572(-12)	.121(-10)	.937(-10)	.867(-10)	.779(-10)	.696(-10)	.514(-10)	.322(-10)
5	.183(-12)	.263(-11)	.562(-10)	.998(-10)	.982(-10)	.810(-10)	.712(-10)	.432(-10)
6	.679(-13)	.553(-12)	.135(-10)	.104(-09)	.104(-09)	.970(-10)	.749(-10)	.609(-10)
7		.244(-12)	.487(-11)	.688(-10)	.115(-09)	.101(-09)	.101(-09)	.687(-10)
8		.576(-13)	.134(-11)	.167(-10)	.108(-09)	.113(-09)	.117(-09)	.869(-10)
9		.509(-13)	.437(-12)	.528(-11)	.663(-10)	.118(-09)	.123(-09)	.966(-10)
10		.403(-13)	.133(-12)	.177(-11)	.245(-10)	.118(-09)	.117(-09)	.111(-09)
11			.483(-13)	.794(-12)	.925(-11)	.822(-10)	.122(-09)	.123(-09)
12			.935(-13)	.171(-12)	.295(-11)	.277(-10)	.122(-09)	.133(-09)
13			.209(-13)	.117(-12)	.147(-11)	.106(-10)	.905(-10)	.127(-09)
14				.115(-12)	.508(-12)	.455(-11)	.312(-10)	.117(-09)
15				.541(-13)	.170(-12)	.143(-11)	.110(-10)	.771(-10)
16					.720(-13)	.775(-12)	.306(-11)	.310(-10)
17					.413(-13)	.455(-12)	.172(-11)	.145(-10)
18						.260(-12)	.730(-12)	.399(-11)
19						.840(-13)	.171(-12)	.135(-11)
20							.167(-12)	.704(-12)

Table 180 D + D_2 LSTH REACTIVE T_{tr}=4000. T_{rot}= 500.								
v'	v 1	3	5	7	9	11	13	15
0	.432(-10)	.379(-10)	.390(-10)	.313(-10)	.246(-10)	.247(-10)	.205(-10)	.401(-11)
1	.374(-10)	.533(-10)	.484(-10)	.423(-10)	.372(-10)	.333(-10)	.266(-10)	.592(-11)
2	.970(-11)	.775(-10)	.686(-10)	.538(-10)	.493(-10)	.423(-10)	.334(-10)	.697(-11)
3	.190(-11)	.502(-10)	.816(-10)	.772(-10)	.609(-10)	.512(-10)	.370(-10)	.904(-11)
4	.473(-12)	.101(-10)	.851(-10)	.868(-10)	.754(-10)	.659(-10)	.532(-10)	.107(-10)
5	.118(-12)	.360(-11)	.569(-10)	.105(-09)	.997(-10)	.850(-10)	.674(-10)	.133(-10)
6		.766(-12)	.164(-10)	.978(-10)	.999(-10)	.984(-10)	.798(-10)	.144(-10)
7		.166(-12)	.501(-11)	.674(-10)	.112(-09)	.111(-09)	.101(-09)	.144(-10)
8		.247(-13)	.121(-11)	.177(-10)	.108(-09)	.114(-09)	.111(-09)	.214(-10)
9		.282(-13)	.365(-12)	.682(-11)	.729(-10)	.117(-09)	.120(-09)	.209(-10)
10			.352(-12)	.214(-11)	.213(-10)	.113(-09)	.116(-09)	.333(-10)
11			.877(-13)	.127(-11)	.852(-11)	.718(-10)	.124(-09)	.398(-10)
12			.778(-13)	.325(-12)	.375(-11)	.298(-10)	.124(-09)	.345(-10)
13			.000(-00)	.123(-12)	.113(-11)	.126(-10)	.787(-10)	.420(-10)
14			.000(-00)	.000(-00)	.650(-12)	.409(-11)	.404(-10)	.474(-10)
15			.000(-00)	.109(-12)	.381(-12)	.192(-11)	.134(-10)	.589(-10)
16			.000(-00)	.227(-13)	.138(-13)	.450(-12)	.430(-11)	.721(-10)
17			.196(-13)	.000(-00)	.619(-13)	.279(-12)	.165(-11)	.684(-10)
18				.000(-00)	.000(-00)	.176(-12)	.828(-12)	.854(-10)
19				.288(-13)	.342(-13)	.452(-13)	.460(-12)	.697(-10)
20								.253(-10)

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Table 181 D + D_2 LSTH REACTIVE T_{tr}=4000. T_{rot}=1000.

v'	v 1	3	5	7	9	11	13	15
0	.406(-10)	.362(-10)	.368(-10)	.345(-10)	.262(-10)	.254(-10)	.189(-10)	.143(-10)
1	.425(-10)	.489(-10)	.458(-10)	.439(-10)	.391(-10)	.315(-10)	.258(-10)	.161(-10)
2	.923(-11)	.706(-10)	.681(-10)	.524(-10)	.443(-10)	.339(-10)	.346(-10)	.214(-10)
3	.273(-11)	.520(-10)	.798(-10)	.692(-10)	.564(-10)	.451(-10)	.384(-10)	.279(-10)
4	.702(-12)	.145(-10)	.902(-10)	.854(-10)	.744(-10)	.699(-10)	.499(-10)	.333(-10)
5	.239(-12)	.348(-11)	.548(-10)	.975(-10)	.901(-10)	.787(-10)	.597(-10)	.399(-10)
6	.862(-13)	.110(-11)	.169(-10)	.106(-09)	.103(-09)	.973(-10)	.804(-10)	.530(-10)
7	.177(-13)	.302(-12)	.589(-11)	.675(-10)	.113(-09)	.103(-09)	.862(-10)	.615(-10)
8	.227(-13)	.181(-12)	.179(-11)	.243(-10)	.110(-09)	.113(-09)	.101(-09)	.782(-10)
9		.306(-13)	.472(-12)	.902(-11)	.742(-10)	.123(-09)	.117(-09)	.880(-10)
10			.267(-12)	.207(-11)	.246(-10)	.109(-09)	.128(-09)	.928(-10)
11			.137(-12)	.114(-11)	.939(-11)	.859(-10)	.118(-09)	.118(-09)
12			.988(-13)	.386(-12)	.418(-11)	.350(-10)	.116(-09)	.135(-09)
13			.152(-13)	.116(-12)	.174(-11)	.142(-10)	.909(-10)	.120(-09)
14			.000(-00)	.562(-13)	.459(-12)	.381(-11)	.465(-10)	.129(-09)
15			.212(-13)	.274(-13)	.333(-12)	.279(-11)	.154(-10)	.927(-10)
16				.509(-13)	.416(-12)	.106(-11)	.796(-11)	.419(-10)
17					.131(-13)	.527(-12)	.326(-11)	.210(-10)
18						.159(-12)	.106(-11)	.105(-10)
19							.271(-12)	.216(-11)
20							.501(-13)	.113(-11)

Table 182 D + D_2 LSTH REACTIVE T_{tr}=4000. T_{rot}=4000.

v'	v 1	3	5	7	9	11	13	15
0	.420(-10)	.341(-10)	.342(-10)	.293(-10)	.221(-10)	.199(-10)	.164(-10)	.918(-11)
1	.445(-10)	.465(-10)	.399(-10)	.365(-10)	.293(-10)	.272(-10)	.189(-10)	.155(-10)
2	.214(-10)	.613(-10)	.561(-10)	.512(-10)	.430(-10)	.341(-10)	.269(-10)	.186(-10)
3	.688(-11)	.558(-10)	.762(-10)	.625(-10)	.515(-10)	.434(-10)	.322(-10)	.193(-10)
4	.277(-11)	.323(-10)	.817(-10)	.711(-10)	.672(-10)	.560(-10)	.395(-10)	.280(-10)
5	.104(-11)	.148(-10)	.729(-10)	.911(-10)	.868(-10)	.746(-10)	.504(-10)	.310(-10)
6	.379(-12)	.699(-11)	.382(-10)	.904(-10)	.101(-09)	.791(-10)	.691(-10)	.431(-10)
7	.228(-12)	.156(-11)	.172(-10)	.841(-10)	.962(-10)	.104(-09)	.804(-10)	.584(-10)
8	.000(-00)	.783(-12)	.611(-11)	.538(-10)	.112(-09)	.108(-09)	.891(-10)	.715(-10)
9	.440(-13)	.306(-12)	.418(-11)	.261(-10)	.960(-10)	.108(-09)	.109(-09)	.795(-10)
10		.975(-13)	.219(-11)	.125(-10)	.613(-10)	.110(-09)	.119(-09)	.823(-10)
11		.101(-12)	.821(-12)	.482(-11)	.332(-10)	.108(-09)	.125(-09)	.102(-09)
12		.196(-13)	.393(-12)	.278(-11)	.134(-10)	.698(-10)	.133(-09)	.106(-09)
13			.953(-13)	.182(-11)	.950(-11)	.365(-10)	.976(-10)	.102(-09)
14			.119(-12)	.524(-12)	.313(-11)	.213(-10)	.665(-10)	.120(-09)
15				.811(-13)	.177(-11)	.757(-11)	.380(-10)	.107(-09)
16				.163(-12)	.112(-11)	.505(-11)	.233(-10)	.792(-10)
17					.221(-12)	.276(-11)	.875(-11)	.418(-10)
18					.137(-12)	.346(-12)	.494(-11)	.187(-10)
19					.409(-13)	.331(-12)	.129(-11)	.746(-11)
20					.818(-13)		.283(-12)	.765(-12)

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