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**Supporting Information for: New *ab initio* potential energy surfaces for the  
Renner-Teller coupled  $1^1A'$  and  $1^1A''$  states of  $CH_2$**

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Table S1: The dependence of root mean square errors on the polynomial order M in the fitting.

polynomial order M	4	5	6	7	8	9	10
RMS error of $V_a^0/cm^{-1}$				77.76	51.36	34.32	31.88
RMS error of $V_b^0/cm^{-1}$				289.11	258.23	132.31	142.88
RMS error of $V_a^{core}/cm^{-1}$	36.77	16.38	14.29	12.25	9.45		
RMS error of $V_b^{core}/cm^{-1}$	279.56	134.69	68.21	55.85	37.29		
RMS error of $L_z^{ab}$			0.0146	0.0084	0.0065	0.0060	
RMS error of $L_{zz}^{aa}$			0.0573	0.0465	0.0257	0.0225	
RMS error of $L_{zz}^{bb}$			0.0382	0.0222	0.0203	0.0148	

Table S2: The parameters for the fit of  $V_a^0$  and  $V_b^0$ .

$i$	$j$	$k$	$C_{ijk}^a$	$C_{ijk}^b$
0	0	0	1.822319E-06	9.364791E-02
0	0	1	4.975157E-04	-2.046539E-01
0	0	2	5.561292E-02	-4.600018E-02
0	0	3	-9.178231E-03	7.058587E-01
0	0	4	1.099067E-02	-8.210951E-01
0	0	5	-8.165654E-02	-9.965365E-01
0	0	6	5.574630E-02	3.325806E+00
0	0	7	1.676745E-01	-3.193876E+00
0	0	8	-1.257266E-01	1.496268E+00
0	0	9	-1.337743E-01	-5.010717E-01
0	0	10	1.027979E-01	1.459053E-01
0	1	0	7.019563E-04	-1.440288E-01
0	1	1	1.477522E-01	4.475722E-01
0	1	2	-4.948969E-02	-6.393261E-01
0	1	3	9.833353E-02	-6.308893E-01
0	1	4	-2.540400E-02	3.535447E+00
0	1	5	-1.204834E-01	-2.325676E+00
0	1	6	6.873697E-02	-5.923003E+00
0	1	7	2.757637E-01	1.151280E+01
0	1	8	-1.409378E-01	-7.652168E+00
0	1	9	-6.875868E-02	1.842609E+00
0	2	0	6.322487E+00	1.996371E+00
0	2	1	2.084346E-02	-4.586896E-01
0	2	2	-4.220009E-02	-1.940342E+00
0	2	3	3.064042E-01	8.512601E+00
0	2	4	-7.275308E-01	-5.972110E+00
0	2	5	-4.705054E-02	-1.603183E+01

0	2	6	1.446116E+00	3.428479E+01
0	2	7	8.524161E-02	-2.507319E+01
0	2	8	-7.388646E-01	6.634447E+00
0	3	0	-3.566524E+01	-3.291863E+00
0	3	1	-1.295315E+00	-4.257156E+00
0	3	2	-3.294272E-01	3.254555E+00
0	3	3	2.136493E+00	1.785915E+00
0	3	4	-3.177428E+00	1.178927E+01
0	3	5	-5.599689E+00	-2.519611E+01
0	3	6	4.036688E+00	9.939190E+00
0	3	7	2.696073E+00	1.812418E+00
0	4	0	1.232658E+02	-1.536459E+01
0	4	1	9.228228E+00	6.120275E+01
0	4	2	6.535630E+00	4.665527E+01
0	4	3	-3.511808E+01	-3.020851E+02
0	4	4	-1.549645E+01	3.450291E+02
0	4	5	4.745747E+01	-1.508428E+02
0	4	6	-9.133304E+00	2.029835E+01
0	5	0	-2.412262E+02	3.920209E+01
0	5	1	-1.543782E+02	-5.868882E+01
0	5	2	2.341378E+02	-3.424043E+02
0	5	3	1.995050E+02	8.349245E+02
0	5	4	1.540031E+02	-6.607092E+02
0	5	5	-2.330817E+02	1.806271E+02
0	6	0	1.357236E+03	2.599647E+02
0	6	1	-2.968116E+02	-9.528497E+02
0	6	2	-1.001940E+03	1.282725E+03
0	6	3	-1.125726E+03	-8.441396E+02
0	6	4	5.805430E+02	2.926863E+02
0	7	0	-3.366584E+04	-1.442723E+03

0	7	1	1.346002E+04	3.888034E+03
0	7	2	-3.445023E+04	-2.743477E+03
0	7	3	4.883101E+03	1.995175E+02
0	8	0	5.732818E+04	2.082086E+03
0	8	1	-1.006858E+03	-5.150715E+03
0	8	2	1.770142E+05	2.841156E+03
0	9	0	2.286351E+06	3.658862E+02
0	9	1	-3.413659E+05	1.038047E+03
0	10	0	-1.037492E+07	-1.760235E+03
1	0	0	7.019563E-04	-1.440291E-01
1	0	1	1.477522E-01	4.475731E-01
1	0	2	-4.948969E-02	-6.393274E-01
1	0	3	9.833352E-02	-6.308902E-01
1	0	4	-2.540400E-02	3.535453E+00
1	0	5	-1.204834E-01	-2.325680E+00
1	0	6	6.873697E-02	-5.923012E+00
1	0	7	2.757637E-01	1.151282E+01
1	0	8	-1.409378E-01	-7.652178E+00
1	0	9	-6.875868E-02	1.842612E+00
1	1	0	-7.205053E-02	8.306276E-02
1	1	1	-8.213386E-01	-7.334908E-02
1	1	2	4.403558E-01	-1.214425E-02
1	1	3	-5.287015E-01	-4.649946E-01
1	1	4	1.114648E-01	-1.229412E+00
1	1	5	1.333706E+00	-1.170404E+00
1	1	6	3.725440E-02	1.531003E+01
1	1	7	-1.582901E+00	-2.088535E+01
1	1	8	7.202748E-01	8.364886E+00
1	2	0	-1.974954E-01	1.827786E+00
1	2	1	-1.574209E+00	-8.809240E+00

1	2	2	-9.791533E-01	5.201112E+00
1	2	3	3.581022E+00	3.283143E+01
1	2	4	3.341940E+00	-6.325466E+01
1	2	5	-9.083284E+00	3.528560E+01
1	2	6	-6.620757E+00	1.063713E+00
1	2	7	1.025391E+01	-4.249551E+00
1	3	0	-4.801901E+00	-1.015118E+01
1	3	1	8.655905E+00	3.178811E+01
1	3	2	6.356292E+00	1.532979E+01
1	3	3	-5.140624E+01	-1.627407E+02
1	3	4	-6.792368E+01	2.118311E+02
1	3	5	6.700843E+01	-1.002780E+02
1	3	6	2.872503E+01	1.277400E+01
1	4	0	2.113375E+01	1.446511E-01
1	4	1	1.780422E+02	8.033087E+01
1	4	2	-3.166025E+02	-4.188283E+02
1	4	3	-4.984079E+00	7.504530E+02
1	4	4	7.282038E+02	-5.991215E+02
1	4	5	-4.721577E+02	1.892730E+02
1	5	0	-2.553317E+02	2.462432E+02
1	5	1	1.880424E+02	-1.171317E+03
1	5	2	2.880669E+03	2.046778E+03
1	5	3	2.005896E+03	-1.507170E+03
1	5	4	-3.471101E+03	4.116698E+02
1	6	0	9.124781E+02	-8.129267E+02
1	6	1	-2.557699E+04	3.278558E+03
1	6	2	1.574195E+04	-3.547849E+03
1	6	3	3.494719E+03	1.062090E+03
1	7	0	2.217458E+04	3.180389E+02
1	7	1	4.410684E+04	-2.468209E+03

1	7	2	-1.498997E+05	1.954386E+03
1	8	0	-1.580943E+05	9.705440E+02
1	8	1	5.289566E+05	-7.945909E+02
1	9	0	3.623064E+05	1.280067E+02
2	0	0	6.322487E+00	1.996380E+00
2	0	1	2.084346E-02	-4.586921E-01
2	0	2	-4.220009E-02	-1.940349E+00
2	0	3	3.064042E-01	8.512638E+00
2	0	4	-7.275308E-01	-5.972139E+00
2	0	5	-4.705054E-02	-1.603190E+01
2	0	6	1.446116E+00	3.428494E+01
2	0	7	8.524161E-02	-2.507330E+01
2	0	8	-7.388646E-01	6.634478E+00
2	1	0	-1.974954E-01	1.827790E+00
2	1	1	-1.574209E+00	-8.809259E+00
2	1	2	-9.791533E-01	5.201116E+00
2	1	3	3.581022E+00	3.283152E+01
2	1	4	3.341940E+00	-6.325480E+01
2	1	5	-9.083284E+00	3.528564E+01
2	1	6	-6.620757E+00	1.063748E+00
2	1	7	1.025391E+01	-4.249570E+00
2	2	0	6.542613E-01	-1.620871E+01
2	2	1	1.553119E+01	4.667222E+01
2	2	2	4.715304E+01	3.863903E+01
2	2	3	-6.764001E+01	-2.233732E+02
2	2	4	-8.650571E+01	2.158395E+02
2	2	5	7.546152E+01	-4.163394E+01
2	2	6	1.954678E+01	-1.975638E+01
2	3	0	-1.573651E+01	-2.569398E+00
2	3	1	2.373943E+02	1.295528E+02

2	3	2	-5.354334E+02	-3.022378E+02
2	3	3	-3.756519E+02	1.571919E+02
2	3	4	1.335999E+03	3.840530E+01
2	3	5	-4.062067E+02	-1.980027E+01
2	4	0	3.100569E+01	3.912041E+02
2	4	1	-3.506850E+03	-1.653031E+03
2	4	2	3.214647E+02	1.629921E+03
2	4	3	6.327015E+03	-7.674500E+01
2	4	4	-4.845508E+03	-3.269523E+02
2	5	0	9.008741E+03	-2.012724E+03
2	5	1	-4.510173E+03	5.598324E+03
2	5	2	3.223235E+03	-4.271139E+03
2	5	3	-1.396062E+04	7.975863E+02
2	6	0	-6.143342E+04	4.686319E+03
2	6	1	1.607593E+05	-7.651568E+03
2	6	2	1.551259E+04	3.325137E+03
2	7	0	-3.231995E+05	-4.126995E+03
2	7	1	-5.022835E+05	2.727194E+03
2	8	0	2.380580E+06	3.860271E+02
3	0	0	-3.566524E+01	-3.291887E+00
3	0	1	-1.295315E+00	-4.257181E+00
3	0	2	-3.294272E-01	3.254581E+00
3	0	3	2.136493E+00	1.785904E+00
3	0	4	-3.177428E+00	1.178935E+01
3	0	5	-5.599689E+00	-2.519623E+01
3	0	6	4.036688E+00	9.939198E+00
3	0	7	2.696073E+00	1.812450E+00
3	1	0	-4.801901E+00	-1.015123E+01
3	1	1	8.655905E+00	3.178824E+01
3	1	2	6.356292E+00	1.532990E+01



3	1	3	-5.140624E+01	-1.627415E+02
3	1	4	-6.792367E+01	2.118320E+02
3	1	5	6.700843E+01	-1.002784E+02
3	1	6	2.872503E+01	1.277401E+01
3	2	0	-1.573651E+01	-2.569408E+00
3	2	1	2.373943E+02	1.295531E+02
3	2	2	-5.354334E+02	-3.022386E+02
3	2	3	-3.756519E+02	1.571930E+02
3	2	4	1.335999E+03	3.840444E+01
3	2	5	-4.062067E+02	-1.979994E+01
3	3	0	5.407999E+02	2.510542E+02
3	3	1	-3.281180E+03	-1.124865E+03
3	3	2	5.248069E+03	1.264231E+03
3	3	3	6.720395E+03	2.378943E+01
3	3	4	-6.680477E+03	-3.469508E+02
3	4	0	-1.937238E+03	-1.246849E+03
3	4	1	3.748175E+04	3.706275E+03
3	4	2	-3.336032E+04	-3.008152E+03
3	4	3	-2.390424E+04	5.262582E+02
3	5	0	1.560457E+04	4.145680E+03
3	5	1	-1.070288E+05	-7.888694E+03
3	5	2	4.982658E+04	2.919589E+03
3	6	0	7.533748E+04	-8.597814E+03
3	6	1	-7.500728E+05	7.711128E+03
3	7	0	-1.202481E+06	6.543519E+03
4	0	0	1.232658E+02	-1.536471E+01
4	0	1	9.228228E+00	6.120327E+01
4	0	2	6.535629E+00	4.665567E+01
4	0	3	-3.511808E+01	-3.020876E+02
4	0	4	-1.549645E+01	3.450319E+02

4	0	5	4.745747E+01	-1.508439E+02
4	0	6	-9.133303E+00	2.029844E+01
4	1	0	2.113375E+01	1.446752E-01
4	1	1	1.780422E+02	8.033142E+01
4	1	2	-3.166025E+02	-4.188310E+02
4	1	3	-4.984077E+00	7.504575E+02
4	1	4	7.282037E+02	-5.991248E+02
4	1	5	-4.721577E+02	1.892739E+02
4	2	0	3.100570E+01	3.912058E+02
4	2	1	-3.506850E+03	-1.653038E+03
4	2	2	3.214647E+02	1.629929E+03
4	2	3	6.327015E+03	-7.674676E+01
4	2	4	-4.845508E+03	-3.269530E+02
4	3	0	-1.937238E+03	-1.246853E+03
4	3	1	3.748175E+04	3.706284E+03
4	3	2	-3.336032E+04	-3.008159E+03
4	3	3	-2.390424E+04	5.262596E+02
4	4	0	8.886060E+04	1.841258E+03
4	4	1	-3.451694E+05	-1.399286E+03
4	4	2	3.377715E+05	5.103574E+02
4	5	0	-1.044696E+06	-1.610371E+03
4	5	1	1.524772E+06	5.229351E+01
4	6	0	2.809323E+06	-1.033267E+03
5	0	0	-2.412262E+02	3.920253E+01
5	0	1	-1.543782E+02	-5.868956E+01
5	0	2	2.341378E+02	-3.424081E+02
5	0	3	1.995050E+02	8.349340E+02
5	0	4	1.540031E+02	-6.607167E+02
5	0	5	-2.330817E+02	1.806291E+02
5	1	0	-2.553317E+02	2.462451E+02

5	1	1	1.880423E+02	-1.171327E+03
5	1	2	2.880669E+03	2.046794E+03
5	1	3	2.005896E+03	-1.507182E+03
5	1	4	-3.471101E+03	4.116730E+02
5	2	0	9.008740E+03	-2.012737E+03
5	2	1	-4.510173E+03	5.598361E+03
5	2	2	3.223235E+03	-4.271167E+03
5	2	3	-1.396062E+04	7.975921E+02
5	3	0	1.560457E+04	4.145703E+03
5	3	1	-1.070288E+05	-7.888730E+03
5	3	2	4.982658E+04	2.919601E+03
5	4	0	-1.044696E+06	-1.610390E+03
5	4	1	1.524772E+06	5.229909E+01
5	5	0	4.180091E+06	4.288813E+03
6	0	0	1.357236E+03	2.599678E+02
6	0	1	-2.968116E+02	-9.528616E+02
6	0	2	-1.001940E+03	1.282741E+03
6	0	3	-1.125726E+03	-8.441514E+02
6	0	4	5.805430E+02	2.926906E+02
6	1	0	9.124780E+02	-8.129356E+02
6	1	1	-2.557699E+04	3.278592E+03
6	1	2	1.574195E+04	-3.547885E+03
6	1	3	3.494718E+03	1.062101E+03
6	2	0	-6.143342E+04	4.686358E+03
6	2	1	1.607593E+05	-7.651633E+03
6	2	2	1.551259E+04	3.325165E+03
6	3	0	7.533748E+04	-8.597865E+03
6	3	1	-7.500728E+05	7.711174E+03
6	4	0	2.809323E+06	-1.033243E+03
7	0	0	-3.366584E+04	-1.442745E+03

7	0	1	1.346002E+04	3.888093E+03
7	0	2	-3.445022E+04	-2.743519E+03
7	0	3	4.883101E+03	1.995210E+02
7	1	0	2.217458E+04	3.180491E+02
7	1	1	4.410684E+04	-2.468245E+03
7	1	2	-1.498997E+05	1.954410E+03
7	2	0	-3.231995E+05	-4.127043E+03
7	2	1	-5.022835E+05	2.727223E+03
7	3	0	-1.202481E+06	6.543552E+03
8	0	0	5.732817E+04	2.082125E+03
8	0	1	-1.006861E+03	-5.150807E+03
8	0	2	1.770142E+05	2.841205E+03
8	1	0	-1.580943E+05	9.705453E+02
8	1	1	5.289565E+05	-7.945923E+02
8	2	0	2.380580E+06	3.860437E+02
9	0	0	2.286350E+06	3.658795E+02
9	0	1	-3.413659E+05	1.038073E+03
9	1	0	3.623063E+05	1.280139E+02
10	0	0	-1.037492E+07	-1.760258E+03
	$\alpha_1$		1.561282E-01	3.162976E-01
	$\alpha_2$		1.561282E-01	3.162977E-01
	$\beta$		1.161316E+00	8.455088E-01

Table S3: The parameters for the fit of  $V_a^{core}$  and  $V_b^{core}$ .

$i$	$j$	$k$	$C_{ijk}^a$	$C_{ijk}^b$
0	0	0	-5.846322E-05	8.280755E-05
0	0	1	3.439324E-04	1.501117E-03
0	0	2	6.757179E-04	-9.237705E-03
0	0	3	-8.764389E-03	1.208753E-03
0	0	4	-5.871856E-03	3.856866E-02
0	0	5	1.259540E-02	-5.477629E-02
0	0	6	4.357416E-03	2.055069E-02
0	1	0	2.757539E-03	9.873601E-04
0	1	1	-1.516438E-03	-1.526948E-04
0	1	2	7.229319E-04	2.378391E-02
0	1	3	8.884646E-03	-7.003735E-02
0	1	4	-1.307109E-03	6.611697E-02
0	1	5	-9.830239E-03	-1.706628E-02
0	2	0	1.790991E-03	-5.050347E-03
0	2	1	-1.794743E-03	2.068807E-02
0	2	2	-8.813791E-02	-5.755185E-02
0	2	3	9.134935E-03	9.881655E-02
0	2	4	1.163667E-01	-6.076545E-02
0	3	0	3.154536E-02	-2.027590E-02
0	3	1	6.833272E-02	-3.813556E-02
0	3	2	-1.224312E-01	1.770834E-01
0	3	3	-1.847956E-01	9.617698E-04
0	4	0	-8.266314E-02	4.437684E-02
0	4	1	9.442080E-02	-2.309844E-01
0	4	2	5.957642E-01	-2.156513E-01
0	5	0	-8.434554E-02	1.372067E-01
0	5	1	-2.946633E-01	3.638137E-01

0	6	0	4.838000E-02	-2.280893E-01
1	0	0	2.771976E-03	9.863836E-04
1	0	1	-1.361758E-03	-1.469276E-04
1	0	2	2.617593E-04	2.377012E-02
1	0	3	8.229909E-03	-7.002274E-02
1	0	4	-8.898699E-04	6.611214E-02
1	0	5	-9.143064E-03	-1.706665E-02
1	1	0	-1.833103E-03	7.046007E-03
1	1	1	4.091169E-03	-2.709608E-03
1	1	2	3.049078E-02	1.049862E-02
1	1	3	-1.566492E-02	-2.184493E-02
1	1	4	-4.801457E-02	-6.188140E-03
1	2	0	1.926358E-04	-2.560439E-03
1	2	1	-5.751493E-02	2.332906E-02
1	2	2	4.584941E-02	-9.321741E-02
1	2	3	1.759074E-01	8.914417E-02
1	3	0	1.422631E-01	-3.871361E-02
1	3	1	-2.176918E-01	-7.399178E-02
1	3	2	-3.061510E-01	-4.499967E-02
1	4	0	3.097528E-01	2.350307E-01
1	4	1	6.898412E-01	2.057917E-01
1	5	0	-1.055378E+00	-3.300720E-01
2	0	0	2.287825E-03	-5.047650E-03
2	0	1	-4.313109E-03	2.067643E-02
2	0	2	-8.780032E-02	-5.753319E-02
2	0	3	1.337104E-02	9.880528E-02
2	0	4	1.127605E-01	-6.076017E-02
2	1	0	-2.652562E-03	-2.560523E-03
2	1	1	-5.876583E-02	2.333406E-02
2	1	2	6.358056E-02	-9.323748E-02

2	1	3	1.549924E-01	8.915260E-02
2	2	0	-1.692982E-01	-7.434561E-02
2	2	1	2.525865E-01	-4.428522E-02
2	2	2	-3.005989E-01	-3.174452E-02
2	3	0	-6.441571E-02	1.074498E-01
2	3	1	-7.152639E-02	5.966526E-02
2	4	0	7.291540E-01	1.181924E-01
3	0	0	3.014569E-02	-2.026999E-02
3	0	1	6.701521E-02	-3.812842E-02
3	0	2	-8.802044E-02	1.770506E-01
3	0	3	-2.030851E-01	9.585862E-04
3	1	0	1.435748E-01	-3.870797E-02
3	1	1	-1.630479E-01	-7.399415E-02
3	1	2	-3.388251E-01	-4.500187E-02
3	2	0	-4.763692E-02	1.074459E-01
3	2	1	-1.341222E-01	5.962570E-02
3	3	0	7.134537E-02	-3.705910E-01
4	0	0	-9.361033E-02	4.429997E-02
4	0	1	1.460660E-01	-2.309330E-01
4	0	2	5.273881E-01	-2.156147E-01
4	1	0	3.722889E-01	2.350500E-01
4	1	1	5.877098E-01	2.058215E-01
4	2	0	6.826500E-01	1.182164E-01
5	0	0	-8.202824E-02	1.373806E-01
5	0	1	-3.687923E-01	3.637351E-01
5	1	0	-1.168497E+00	-3.301211E-01
6	0	0	1.037405E-01	-2.281993E-01
			<hr/>	
$\alpha$			1.412804E+00	-5.586587E-01
			<hr/>	

Table S4: The parameters for the fit of the  $L_z^{ab}$ ,  $L_{zz}^{aa}$  and  $L_{zz}^{bb}$ .

$i$	$j$	$k$	$C_{ijk}^{ab}$	$C_{ijk}^{aa}$	$C_{ijk}^{bb}$
0	0	0	-1.259147E+02	-5.029769E+00	2.317521E+02
0	0	1	5.017703E+01	-8.621363E+00	1.325768E+03
0	0	2	-3.768497E+01	2.582719E+01	1.780443E+03
0	0	3	6.255321E+01	8.170891E+01	2.234616E+03
0	0	4	1.179397E+03	1.985593E+01	-1.811663E+03
0	0	5	9.226061E+02	-6.936503E+01	-3.163940E+03
0	0	6	-3.357522E+02	-4.065899E+01	8.177741E+02
0	0	7	1.736203E+02	-2.692298E+01	-2.213417E+02
0	0	8	9.747144E+00	-1.390627E+01	5.648016E+01
0	0	9	-2.006492E+00	8.655202E+00	-1.700806E+00
0	1	0	6.361026E+02	-1.807693E+00	-1.578931E+03
0	1	1	-4.518256E+02	-1.819538E+00	-8.578808E+03
0	1	2	-7.770144E+01	-7.978971E+00	-9.068730E+03
0	1	3	2.559633E+02	-5.114439E+01	-1.627746E+04
0	1	4	-5.953419E+03	-8.562679E+01	5.388394E+03
0	1	5	-7.523167E+03	-1.359770E+01	2.519276E+04
0	1	6	1.841745E+03	3.976878E+01	-5.126849E+03
0	1	7	-5.481784E+02	8.228524E+01	8.912752E+02
0	1	8	-2.042120E+01	3.411806E+01	-1.074398E+02
0	2	0	6.379987E+02	1.210463E+01	1.013072E+03
0	2	1	2.800232E+03	3.154595E+01	1.605959E+03
0	2	2	3.095347E+03	-3.615475E+01	2.732153E+04
0	2	3	-2.653622E+03	-1.978206E+02	7.872326E+04
0	2	4	7.933922E+03	-1.462100E+02	-2.116613E+04
0	2	5	2.393729E+04	1.516382E+02	-1.004405E+05
0	2	6	-3.038628E+03	1.997003E+02	9.221721E+03
0	2	7	4.281224E+02	-2.085270E+01	-1.415710E+03



0	3	0	-2.354013E+03	3.978680E+01	1.022555E+04
0	3	1	3.845671E+03	9.070266E+01	4.845369E+04
0	3	2	5.422124E+02	-4.375925E+00	3.570006E+04
0	3	3	5.165582E+03	-1.216005E+02	-4.827936E+04
0	3	4	2.011178E+04	3.984478E+01	6.355680E+04
0	3	5	-3.417579E+04	3.093801E+02	1.931359E+05
0	3	6	1.556090E+03	-1.208588E+02	-5.099682E+03
0	4	0	-9.443035E+03	6.451972E+01	1.989886E+03
0	4	1	-2.065134E+04	1.089153E+02	4.561211E+04
0	4	2	-2.581990E+04	1.496657E+02	-2.693962E+05
0	4	3	1.753994E+04	4.801847E+02	-6.826746E+05
0	4	4	-7.193259E+04	4.474604E+02	-2.932754E+03
0	4	5	1.479014E+04	-5.889881E+02	-1.394519E+05
0	5	0	-1.246119E+04	2.075408E+01	-9.127453E+04
0	5	1	-7.023254E+04	-9.327512E+01	-2.426286E+05
0	5	2	-2.662061E+04	3.966542E+02	-4.448853E+05
0	5	3	-1.168021E+05	1.211317E+03	2.171969E+06
0	5	4	5.966988E+04	-6.420410E+02	-1.159284E+05
0	6	0	1.914191E+04	-2.164773E+02	-2.511458E+05
0	6	1	6.305319E+04	-7.065370E+02	-5.872593E+05
0	6	2	2.326965E+05	4.335252E+02	2.995003E+06
0	6	3	1.605772E+05	-1.866708E+03	-2.978494E+06
0	7	0	1.273072E+05	-7.218374E+02	1.280530E+05
0	7	1	8.023080E+05	-1.073027E+03	1.435482E+06
0	7	2	-1.613143E+05	-5.068937E+02	-4.616564E+06
0	8	0	2.052519E+05	-8.763575E+02	2.676500E+06
0	8	1	-1.180918E+06	3.717083E+03	1.253698E+06
0	9	0	-6.595031E+05	2.943246E+03	-2.139598E+06
1	0	0	6.360304E+02	-1.807693E+00	-1.587140E+03
1	0	1	-4.517816E+02	-1.819538E+00	-8.595686E+03

1	0	2	-7.766802E+01	-7.978971E+00	-9.067166E+03
1	0	3	2.559124E+02	-5.114439E+01	-1.625061E+04
1	0	4	-5.953343E+03	-8.562679E+01	5.408584E+03
1	0	5	-7.523102E+03	-1.359770E+01	2.518829E+04
1	0	6	1.841730E+03	3.976878E+01	-5.125339E+03
1	0	7	-5.481719E+02	8.228524E+01	8.910482E+02
1	0	8	-2.042096E+01	3.411806E+01	-1.074076E+02
1	1	0	-3.681976E+03	-1.015037E+01	9.210163E+03
1	1	1	-1.707758E+03	-1.997815E+01	5.610184E+04
1	1	2	-3.424446E+03	-7.373086E+01	-2.494880E+04
1	1	3	-1.332102E+03	-2.172046E+02	-1.651183E+04
1	1	4	1.094817E+04	2.123420E+01	1.225013E+05
1	1	5	3.804948E+04	2.327556E+02	-9.538851E+04
1	1	6	-7.337776E+03	1.940245E+02	2.254019E+04
1	1	7	8.741576E+02	-2.199938E+02	-6.617019E+02
1	2	0	-2.828242E+03	-1.441255E+01	-1.310501E+03
1	2	1	-1.892242E+03	-2.351723E+01	3.711376E+02
1	2	2	6.672429E+02	-1.069314E+02	6.494203E+04
1	2	3	-2.433444E+03	-1.448927E+02	8.283487E+04
1	2	4	2.118975E+04	5.055735E+02	-4.828351E+05
1	2	5	-7.016385E+04	4.547459E+02	1.874151E+05
1	2	6	6.575229E+03	-6.268090E+02	-2.116912E+04
1	3	0	1.750585E+04	-7.467351E+00	-4.261206E+04
1	3	1	1.148317E+04	-2.294769E+01	-2.808002E+05
1	3	2	-3.804422E+03	-4.015244E+01	1.633878E+05
1	3	3	3.643992E+04	5.398390E+02	-3.021409E+05
1	3	4	-8.740238E+04	1.060293E+03	4.222391E+05
1	3	5	6.058018E+04	-9.232910E+02	-1.564688E+05
1	4	0	6.026198E+04	2.278863E+00	3.414942E+04
1	4	1	4.944598E+04	-1.147618E+02	-2.473888E+05

1	4	2	-1.272884E+04	6.900932E+01	-1.621331E+05
1	4	3	9.484924E+03	1.364274E+03	6.154883E+04
1	4	4	8.257397E+04	-1.584134E+03	-1.952988E+03
1	5	0	5.656123E+04	-2.880924E+01	6.228638E+05
1	5	1	5.831192E+03	-5.090390E+02	1.292385E+06
1	5	2	1.357180E+05	-3.033916E+02	-3.789951E+04
1	5	3	-1.117111E+05	-2.683271E+03	6.110900E+06
1	6	0	-2.007768E+05	-1.716806E+02	1.310422E+06
1	6	1	-4.805463E+05	-1.132276E+03	1.060471E+06
1	6	2	-5.816275E+05	-2.780352E+03	7.330292E+06
1	7	0	-7.401479E+05	-2.742041E+02	-2.590619E+06
1	7	1	2.453344E+05	4.593969E+02	-8.916638E+06
1	8	0	1.051534E+06	1.153431E+03	-8.261152E+06
2	0	0	6.381281E+02	1.210463E+01	1.078697E+03
2	0	1	2.799956E+03	3.154595E+01	1.761124E+03
2	0	2	3.094978E+03	-3.615475E+01	2.731116E+04
2	0	3	-2.653522E+03	-1.978206E+02	7.850221E+04
2	0	4	7.933543E+03	-1.462100E+02	-2.129057E+04
2	0	5	2.393683E+04	1.516382E+02	-1.003928E+05
2	0	6	-3.038580E+03	1.997003E+02	9.216494E+03
2	0	7	4.281123E+02	-2.085270E+01	-1.414842E+03
2	1	0	-2.827738E+03	-1.441255E+01	-1.243201E+03
2	1	1	-1.893171E+03	-2.351723E+01	5.841680E+02
2	1	2	6.684681E+02	-1.069314E+02	6.401631E+04
2	1	3	-2.433269E+03	-1.448927E+02	8.214428E+04
2	1	4	2.118750E+04	5.055735E+02	-4.815503E+05
2	1	5	-7.016271E+04	4.547459E+02	1.873786E+05
2	1	6	6.575163E+03	-6.268090E+02	-2.116327E+04
2	2	0	3.118258E+03	-4.339876E+01	-4.423024E+04
2	2	1	-2.280043E+04	-5.683296E+01	-3.279974E+05

2	2	2	1.288986E+04	-6.232844E+01	-1.392552E+05
2	2	3	-1.413278E+04	6.060364E+02	-1.697329E+05
2	2	4	-9.025556E+04	1.318651E+03	1.592363E+06
2	2	5	3.356774E+04	-1.032578E+03	-1.283752E+05
2	3	0	5.452232E+03	-4.876930E+01	-4.802206E+04
2	3	1	1.676814E+03	-3.488395E+01	1.916309E+05
2	3	2	-2.244113E+03	1.761439E+02	-7.323042E+05
2	3	3	-3.913202E+04	1.708059E+03	5.989579E+05
2	3	4	7.620557E+04	-1.995611E+03	-1.056794E+06
2	4	0	-6.404894E+04	2.538210E+00	4.916730E+04
2	4	1	6.786658E+04	-1.803099E+01	2.858083E+06
2	4	2	9.161244E+04	3.542791E+02	-1.732720E+05
2	4	3	9.595364E+04	-2.287982E+03	-1.496725E+07
2	5	0	-2.419417E+05	1.060957E+02	-1.207445E+06
2	5	1	-3.988288E+05	-1.587971E+02	-3.896858E+06
2	5	2	5.919099E+05	-7.702439E+02	-1.281681E+07
2	6	0	-9.001394E+04	1.787909E+02	-7.456139E+06
2	6	1	9.530857E+05	2.642317E+01	6.926254E+06
2	7	0	8.421251E+05	1.592829E+02	2.441679E+07
3	0	0	-2.353386E+03	3.978680E+01	9.956604E+03
3	0	1	3.846093E+03	9.070266E+01	4.774473E+04
3	0	2	5.429445E+02	-4.375925E+00	3.583935E+04
3	0	3	5.166436E+03	-1.216005E+02	-4.734566E+04
3	0	4	2.011266E+04	3.984478E+01	6.355583E+04
3	0	5	-3.417490E+04	3.093801E+02	1.929750E+05
3	0	6	1.556058E+03	-1.208588E+02	-5.095452E+03
3	1	0	1.750213E+04	-7.467351E+00	-4.228305E+04
3	1	1	1.148405E+04	-2.294769E+01	-2.814154E+05
3	1	2	-3.806830E+03	-4.015244E+01	1.648739E+05
3	1	3	3.643580E+04	5.398390E+02	-2.986606E+05

3	1	4	-8.739591E+04	1.060293E+03	4.194155E+05
3	1	5	6.057828E+04	-9.232910E+02	-1.563924E+05
3	2	0	5.444702E+03	-4.876930E+01	-4.931898E+04
3	2	1	1.678588E+03	-3.488395E+01	1.808574E+05
3	2	2	-2.238401E+03	1.761439E+02	-7.245724E+05
3	2	3	-3.913614E+04	1.708059E+03	6.109139E+05
3	2	4	7.620645E+04	-1.995611E+03	-1.056116E+06
3	3	0	-1.365292E+05	-6.385208E+00	3.127956E+05
3	3	1	1.034827E+05	2.218179E+02	3.455537E+06
3	3	2	-1.401595E+05	7.998002E+02	3.595684E+06
3	3	3	-3.524688E+04	-1.969359E+03	1.890695E+07
3	4	0	-1.896326E+05	1.907894E+02	8.127447E+05
3	4	1	-7.407442E+04	7.185895E+02	-9.951447E+06
3	4	2	-3.538533E+05	1.594308E+03	6.040255E+06
3	5	0	1.074744E+06	3.857720E+02	-1.792063E+06
3	5	1	9.948383E+04	8.207648E+02	8.560670E+06
3	6	0	-2.971993E+05	-4.670053E+02	-4.807232E+06
4	0	0	-9.443800E+03	6.451972E+01	2.017907E+03
4	0	1	-2.064964E+04	1.089153E+02	4.667346E+04
4	0	2	-2.581923E+04	1.496657E+02	-2.688254E+05
4	0	3	1.753535E+04	4.801847E+02	-6.847400E+05
4	0	4	-7.193304E+04	4.474604E+02	-2.352014E+03
4	0	5	1.478983E+04	-5.889881E+02	-1.392838E+05
4	1	0	6.026505E+04	2.278863E+00	3.308657E+04
4	1	1	4.944508E+04	-1.147618E+02	-2.397664E+05
4	1	2	-1.272824E+04	6.900932E+01	-1.644158E+05
4	1	3	9.495004E+03	1.364274E+03	4.814271E+04
4	1	4	8.256637E+04	-1.584134E+03	3.515517E+01
4	2	0	-6.404146E+04	2.538210E+00	4.991132E+04
4	2	1	6.785686E+04	-1.803099E+01	2.861383E+06

4	2	2	9.163422E+04	3.542791E+02	-1.804747E+05
4	2	3	9.595557E+04	-2.287982E+03	-1.496616E+07
4	3	0	-1.896283E+05	1.907894E+02	8.179527E+05
4	3	1	-7.410888E+04	7.185895E+02	-9.925326E+06
4	3	2	-3.539484E+05	1.594308E+03	6.082439E+06
4	4	0	1.578945E+06	4.340277E+02	6.503791E+06
4	4	1	-4.853795E+05	1.294638E+03	-7.039167E+04
4	5	0	-1.739481E+06	-8.102222E+02	-3.351955E+06
5	0	0	-1.246314E+04	2.075408E+01	-8.817881E+04
5	0	1	-7.023300E+04	-9.327512E+01	-2.421179E+05
5	0	2	-2.662022E+04	3.966542E+02	-4.477961E+05
5	0	3	-1.167898E+05	1.211317E+03	2.175111E+06
5	0	4	5.966975E+04	-6.420410E+02	-1.165456E+05
5	1	0	5.656737E+04	-2.880924E+01	6.198631E+05
5	1	1	5.838639E+03	-5.090390E+02	1.280674E+06
5	1	2	1.356866E+05	-3.033916E+02	-3.950628E+04
5	1	3	-1.117150E+05	-2.683271E+03	6.115934E+06
5	2	0	-2.419476E+05	1.060957E+02	-1.191742E+06
5	2	1	-3.987624E+05	-1.587971E+02	-3.887882E+06
5	2	2	5.919044E+05	-7.702439E+02	-1.282753E+07
5	3	0	1.074688E+06	3.857720E+02	-1.835694E+06
5	3	1	9.941854E+04	8.207648E+02	8.583965E+06
5	4	0	-1.739466E+06	-8.102222E+02	-3.458533E+06
6	0	0	1.913605E+04	-2.164773E+02	-2.601576E+05
6	0	1	6.304981E+04	-7.065370E+02	-5.919971E+05
6	0	2	2.326901E+05	4.335252E+02	2.998619E+06
6	0	3	1.605625E+05	-1.866708E+03	-2.978594E+06
6	1	0	-2.007306E+05	-1.716806E+02	1.315342E+06
6	1	1	-4.805754E+05	-1.132276E+03	1.058265E+06
6	1	2	-5.815611E+05	-2.780352E+03	7.330559E+06

6	2	0	-8.996244E+04	1.787909E+02	-7.458485E+06
6	2	1	9.530575E+05	2.642317E+01	6.864543E+06
6	3	0	-2.971369E+05	-4.670053E+02	-4.678760E+06
7	0	0	1.273486E+05	-7.218374E+02	1.427010E+05
7	0	1	8.022564E+05	-1.073027E+03	1.443801E+06
7	0	2	-1.613155E+05	-5.068937E+02	-4.614815E+06
7	1	0	-7.402706E+05	-2.742041E+02	-2.591258E+06
7	1	1	2.453623E+05	4.593969E+02	-8.872886E+06
7	2	0	8.420098E+05	1.592829E+02	2.433123E+07
8	0	0	2.051351E+05	-8.763575E+02	2.653775E+06
8	0	1	-1.180817E+06	3.717083E+03	1.240086E+06
8	1	0	1.051619E+06	1.153431E+03	-8.229992E+06
9	0	0	-6.593705E+05	2.943246E+03	-2.124568E+06
			<hr/>		
	$\alpha_1$		1.668067E-01	2.527560E-01	1.487962E-01
	$\alpha_2$		1.668067E-01	2.527560E-01	1.487963E-01
	$\beta$		1.414977E+00	1.306575E+00	1.379069E+00
			<hr/> <hr/>		