

References where the mathematical symbols are defined:

The fragment molecular orbital method: practical applications to large molecular systems, D. G. Fedorov, K. Kitaura, Eds., CRC Press (2009), in press, chapter 1, or D. G. Fedorov, K. Kitaura, J. Phys. Chem. A 111 (2007) 6904-6914

One-body FMO properties.

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	E	$E'_I$	DX	DY	DZ
1(frg00001,L1)	-76.368024057		-1.66667	0.62299	1.39538
2(frg00002,L1)	-76.368062948		1.20960	1.04212	-1.58706
3(frg00003,L1)	-76.368034599		0.35547	-1.98746	-0.99232

Total energy of the molecule: Euncorr(1)= -229.104121604

Dipole moment D(xyz),DA(1)= -0.1015993 -0.3223615 -1.1839952 1.2312936

Energy gradient (hartree/bohr), no BSSE: G(1)

ATOM#	FRG#	Z	E'X	E'Y	E'Z
1	1	8.0	-0.004458002	0.009078649	0.016153082
2	1	1.0	0.006669925	0.002414628	-0.001125262
3	1	1.0	-0.002007016	-0.011533281	-0.014309482
4	2	8.0	0.008904604	-0.001985700	-0.018161402
5	2	1.0	-0.001314770	-0.006772807	0.002149070
6	2	1.0	-0.007738170	0.008626191	0.015110441
7	3	8.0	-0.004659212	-0.012024374	-0.014849716
8	3	1.0	-0.005265765	0.005099492	0.000260966
9	3	1.0	0.009868405	0.007097202	0.014772303

(1) MAXIMUM GRADIENT = 0.0181614 RMS GRADIENT = 0.0094106

Two-body FMO properties.

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DL: D=C dynamically correlated (MP2,CI), D=N not dynamically correlated (RHF,DFT). D=S separated dimer: semiclassical interaction (ES), D=M MCSCF. L stands for layer, Z is the monomer charge product, R is the interfragment distance relative to van-der-Waals radii (-1.00 is printed if distances are not computed). dDIJ\*VIJ is the density polarisation contribution. Q(I->J) is the charge transfer amount, printed as zero if not available. Positive values correspond to I in IJ having extra negative charge.

I	J	DL	Z	R	Q(I->J)	E	EIJ-EI-EJ	dDIJ*VIJ	tot
				$R_{IJ}$	$\Delta Q_{IJ}$		$\Delta E'_{IJ}$	$Tr(\Delta \mathbf{D}^{IJ} \mathbf{V}^{IJ})$	$\Delta E_{IJ}^{int}$
2	1	N1	0	0.76	0.0529	-152.749614468	-0.01352746	-0.00114287	-9.206
3	1	N1	0	0.76	-0.0510	-152.749513638	-0.01345498	-0.00110265	-9.135
3	2	N1	0	0.77	0.0480	-152.748428743	-0.01233120	-0.00105509	-8.400

Total energy of the molecule: Euncorr(2)= -229.146735861  $E^{FMO2-DFT}$

Dipole moment D(xyz),DA(2)= -0.1328073 -0.2992231 -1.1875491 1.2318462  $\mathbf{D}^{FMO2-RHF}$

Charge transfer for each fragment:

IFG QFG DeltaQ and its contributions from JFG, Q(JFG->IFG).

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 1  0  0.0018 = 2-> 0.0529 3-> -0.0510
 2  0 -0.0049 = 1-> -0.0529 3-> 0.0480
 3  0  0.0030 = 1-> 0.0510 2-> -0.0480
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Total absolute monomer transf. charge = 0.009705  $\Delta\bar{Q}$

Total amount of absolute transf. charge = 0.151896  $\Delta Q$

Energy gradient (hartree/bohr), no BSSE: G(2)  $\nabla E^{\text{FMO2-DFT}}$

ATOM#	FRG#	Z	E'X	E'Y	E'Z
1	1	8.0	-0.019488799	0.008990668	0.018466806
2	1	1.0	0.021271212	0.010289003	-0.002489306
3	1	1.0	-0.001319172	-0.013411622	-0.016198217
4	2	8.0	0.015231132	0.010942236	-0.021159206
5	2	1.0	-0.001515458	-0.023418078	0.004023099
6	2	1.0	-0.009188179	0.008992434	0.016733342
7	3	8.0	0.002955748	-0.024473418	-0.014059464
8	3	1.0	-0.019183837	0.013621367	-0.000778414
9	3	1.0	0.011237352	0.008467410	0.015461361

(2) MAXIMUM GRADIENT = 0.0244734 RMS GRADIENT = 0.0141661

DFT exchange+correlation energy= -22.620105871

Total electron number = 30.000119697

n-body Mulliken atomic charges Q(n)

IAT	IFG	Z	Q(1)	Q(2)	Q(3)
1	1	8.0	-0.854992	-0.831642	
2	1	1.0	0.445786	0.428840	
3	1	1.0	0.409205	0.404644	
4	2	8.0	-0.852980	-0.833508	
5	2	1.0	0.445705	0.426979	
6	2	1.0	0.407275	0.401676	
7	3	8.0	-0.853967	-0.829733	
8	3	1.0	0.446459	0.430035	
9	3	1.0	0.407508	0.402709	