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Very Weak Interactions: Structures, Energies and Bonding in the Tetramers and Pentamers of Hydrogen Sulfide				
César Ibargüen, Doris Guerra, C.Z. Hadad, Albeiro Restrepo Universidad de Antioquia, Medellín Colombia				
Optimized geometries at the MP2/6-311++G** level				
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Tetramers				
T1				
S	-1.74581813	0.35309603	-1.80497714	
S	1.95043515	-1.34427310	-0.94453907	
S	0.84104007	2.14038516	0.72772506	
S	-1.04315708	-1.19194809	1.82804614	
H	-2.44463718	-0.31868002	-0.88774607	
H	-1.36906010	1.27660010	-0.91741607	
H	2.49483719	-0.16761101	-0.62803505	
H	0.95355507	-0.76160806	-1.61611512	
H	0.40268603	1.28740710	1.65646813	
H	0.86821307	3.16664824	1.57948812	
H	-0.04101200	-1.70680213	1.11055309	
H	-0.90457207	-2.09211416	2.80271221	
T2				
S	2.28369417	2.19336217	-0.10253101	
S	2.85544522	-1.82894414	-0.46263104	
S	-0.69537805	-0.34179003	0.98605607	
S	-4.54563535	0.05136300	-0.48225604	
H	2.23660517	2.58825320	-1.37571011	
H	2.88629222	1.04280108	-0.41306503	
H	1.67751013	-1.74456113	0.16151301	
H	3.42817026	-2.44439419	0.57302204	
H	0.05628800	0.73955006	0.75798106	
H	-0.78817206	-0.08394601	2.29172017	
H	-4.57578135	-1.19143509	-0.96545007	
H	-3.29092025	-0.09013601	-0.04822300	
T3				
S	-0.53211604	-0.57167605	1.47979611	
S	2.69538620	-1.72658313	-0.69485205	
S	1.88653214	2.27978417	-0.18322601	
S	-4.02059031	0.08707001	-0.64779405	
H	-1.62914512	-0.30983102	0.76458506	
H	-0.00281400	0.62901705	1.23146909	
H	3.36426526	-2.33545718	0.28553202	
H	1.56285412	-1.69709713	0.01397400	
H	2.94515923	2.72436821	0.49557404	
H	2.49366719	1.13124609	-0.49409004	
H	-5.02440238	-0.42956203	0.06227100	
H	-4.17698832	-0.81020706	-1.62210612	
T4				
S	2.92231622	-0.02927900	0.85682007	
H	2.35180318	-1.06075508	1.47853711	
H	3.50089527	0.41129503	1.97608615	
S	0.26692202	-1.72737313	-1.06250308	
H	-0.03192300	-2.99344323	-1.35774010	
H	-0.86583007	-1.54942412	-0.37713503	
S	-3.06305123	-0.29174102	0.83250806	
H	-2.33016318	0.76544806	0.47121804	
H	-2.92862423	-0.01891200	2.13133916	
S	-0.15797301	2.14220316	-0.76353306	
H	-0.06357700	1.45905711	-1.90581014	
H	0.87601407	1.48577112	-0.22916702	
T5				
S	-2.87013324	0.07016090	-0.17947386	

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H	-3.48501919	0.38394267	0.96186323	
H	-2.02223036	1.09840127	-0.07957985	
S	-0.07016575	-2.87009216	0.17950617	
H	-0.38386236	-3.48514455	-0.96176392	
H	-1.09844947	-2.02226005	0.07946016	
S	2.87013111	-0.07016589	-0.17939486	
H	3.48502315	-0.38392869	0.96194422	
H	2.02224018	-1.09841432	-0.07948785	
S	0.07016270	2.87010518	0.17936517	
H	1.09844432	2.02225108	0.07947816	
H	0.38393664	3.48502417	-0.96195592	
T6				
S	0.27263202	-2.82935421	-0.07431801	
S	-2.91960322	-0.26801402	-0.08587101	
S	-0.27273102	2.82929822	0.07561501	
S	2.91976822	0.26797102	0.08456401	
H	-0.84732007	-2.10239716	-0.02239900	
H	0.04032200	-3.38332326	1.11657609	
H	-3.50097327	-0.00036400	1.08460908	
H	-2.17304316	0.83912406	-0.03843800	
H	0.84695707	2.10195016	0.02346800	
H	-0.03937100	3.38477726	-1.11436908	
H	2.17282217	-0.83892507	0.03752500	
H	3.49953627	0.00075600	-1.08681108	
T7				
S	3.37271226	-0.25575302	-0.44464403	
H	3.47558026	-0.15494801	-1.77063914	
S	2.39314218	0.65037905	-0.39126303	
H	-0.04560600	-1.60636512	0.56344204	
H	-0.83734406	-2.24017817	1.43045911	
H	1.03211108	-2.30529018	0.92023207	
S	-3.40792826	-0.18727601	-0.50188204	
H	-2.36880018	0.64147905	-0.37476403	
H	-2.68903720	-1.05501508	-1.21611810	
S	0.01067500	2.01276815	0.33365703	
H	0.09112801	1.72138713	1.63192312	
H	0.02557400	3.32819526	0.56101104	
T8				
S	-0.16786633	2.88034940	0.03236834	
S	-2.88957562	-0.17488692	-0.17477638	
S	0.16845013	-2.84963668	0.19259951	
S	2.88751905	0.16030895	-0.18587111	
H	0.90616671	2.08581013	-0.00913538	
H	0.11441773	3.29000587	1.26993856	
H	-2.12092559	0.91400030	-0.07372092	
H	-3.51604583	0.08690435	0.97331527	
H	-0.92474504	-2.08947765	0.07771716	
H	-0.09229767	-3.50768342	-0.93794608	
H	3.53296489	-0.10619916	0.95064960	
H	2.12402919	-0.93151657	-0.07994377	
T9				
S	-1.66574113	1.34756611	1.04255408	
H	-2.07347116	2.17352016	2.00888715	
H	2.63396920	0.46456004	-1.30415510	
S	1.66638713	1.34494810	-1.04466408	
H	2.07630016	2.17025817	-2.01062416	
S	-0.37987803	-0.49946004	-1.42154911	
H	-1.32465210	-1.44359711	-1.44184311	
H	-2.22765217	-0.59530804	-1.93760415	
S	0.37905303	-0.49778704	1.42347211	
H	1.32374510	-1.44201911	1.44392311	
H	2.22771117	-0.59278305	1.93630315	
H	-2.63185520	0.46665404	1.30572410	
T10				

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S	0.12054201	2.09125816	-0.18890101	
H	0.13917001	0.75639706	-0.11817401	
H	0.74254306	2.21684317	0.98485007	
S	-3.43737026	-0.04329200	0.21120902	
H	-2.51384119	0.91671207	0.12538301	
H	-4.21803232	0.54296004	-0.69749305	
S	3.26067525	-0.11139101	0.21223702	
H	3.22480124	0.67225005	-0.86584506	
H	4.53778235	-0.43980303	0.01041500	
S	-0.03763000	-1.91908415	-0.25634302	
H	-1.15577309	-2.41695519	0.27371002	
H	0.74385806	-2.52826119	0.63592905	
T11				
S	0.00079600	2.11227016	0.94574807	
H	0.00088200	2.09169816	-0.38859203	
H	-0.00422500	0.77697506	1.00962208	
S	0.00135100	-1.95971315	0.83171606	
H	0.96786307	-2.51122619	1.56835512	
H	-0.96206007	-2.51216219	1.57170812	
S	-2.57332320	-0.04235000	-0.90184807	
H	-3.15755424	0.90417407	-0.16577501	
H	-3.72241828	-0.37386703	-1.49383512	
S	2.57130619	-0.04204900	-0.90264307	
H	3.15809924	0.90207907	-0.16554601	
H	3.71733328	-0.36821103	-1.50349411	
Pentamers				
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P1				
S	0.16165306	0.26161233	2.40459138	
H	0.07943809	1.52299183	1.97643557	
H	0.11549688	-0.21615360	1.15835742	
S	-0.05029015	-1.92348970	-0.98523467	
H	-1.06456371	-2.78572736	-0.89893230	
H	0.86597338	-2.89134825	-0.92099507	
S	3.08706476	-0.24877417	-0.16785089	
H	3.24122545	-0.08984977	1.14730705	
H	4.37650896	-0.01961440	-0.42346419	
S	-3.25807836	-0.28028199	0.00475208	
H	-2.53823177	0.14211838	1.04636738	
H	-3.71862247	0.94496108	-0.25250008	
S	-0.04306426	2.23641309	-1.26520052	
H	-0.77293661	1.16544814	-1.58533613	
H	1.05915107	1.49950076	-1.10415777	
P2				
S	5.03274139	0.01994200	0.00564800	
S	0.97891308	0.52611504	0.48482804	
S	-2.60321220	2.16149917	-0.51674504	
S	-1.49001911	-1.60861412	-1.98598315	
S	-2.05425416	-1.07787508	1.96562315	
H	5.26347140	-0.77556506	-1.03969708	
H	5.54329245	1.08147708	-0.61984005	
H	0.96195407	-0.01359100	1.70463113	
H	2.29927218	0.36446703	0.35787703	
H	-1.39380210	2.64873520	-0.23432902	
H	-2.53378319	1.27777510	0.48258404	
H	-2.11753116	-0.44756303	-2.18531216	
H	-0.51120204	-1.00749608	-1.30379010	
H	-3.06852623	-1.58887712	2.66551620	
H	-2.26987718	-1.87643114	0.91842007	
P3				
S	-3.83745115	-0.11068513	-0.75322636	
H	-5.12238244	-0.06382066	-1.10904302	
H	-4.11701162	-0.73162030	0.39370537	
S	2.62271668	2.05932663	-0.77841411	

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H	3.19260304	2.89843012	0.08784792	
H	1.41484864	2.21057166	-0.22585205	
S	-0.95445892	1.97566660	1.11876289	
H	-1.01105947	0.65197824	0.94184662	
H	-2.06276128	2.16895671	0.40163694	
S	3.16080228	-1.86773743	0.17668948	
H	3.13983214	-0.57681847	-0.16943065	
H	3.73962707	-2.23155007	-0.96875938	
S	-0.90500734	-2.05754295	-0.32063204	
H	-0.98665125	-2.14522808	-1.00747547	
H	0.427733021	-2.16534289	0.30442072	
P4				
S	-0.85231003	2.23625323	0.19515321	
H	-0.85780228	0.89896419	0.16774709	
H	-1.21859749	2.26930778	1.47764010	
S	-0.99526753	-1.75770556	-0.08826226	
H	0.24067965	-2.25533810	0.01188449	
H	-1.40230271	-2.32750963	1.04678339	
S	3.00921432	-2.21561335	0.17612297	
H	3.11676171	-0.88977396	0.04569873	
H	3.63701461	-2.43927766	-0.97923594	
S	-4.46546201	-0.14218888	-0.08770731	
H	-3.95053932	-0.98500541	-0.98469792	
H	-3.51304899	0.76328939	-0.32127201	
S	3.22026632	1.89970755	-0.13459096	
H	3.35966601	2.41413188	-1.35751364	
H	1.92511171	2.22396368	-0.07848469	
P5				
S	3.92936830	-1.42949111	-0.84764207	
H	4.14481832	-1.24061710	-2.15044616	
H	2.60250620	-1.40270710	-1.00257208	
S	2.80711821	1.89213215	1.32442210	
H	3.38040826	2.87776922	0.63223505	
H	3.54169627	0.95703107	0.71556906	
S	-3.02012623	-1.38449810	1.76409913	
H	-3.28481525	-0.57672204	2.79214221	
H	-3.64625128	-0.58718405	0.89437507	
S	0.03088000	-0.27009402	-0.71610805	
H	-0.68271505	-0.79427906	0.28503402	
H	0.60863604	0.63609705	0.07779401	
H	-3.75505628	1.11361109	-1.40676111	
S	-4.08413131	0.53057404	-2.56050619	
H	-2.45510519	0.85347706	-1.57177012	
P6				
S	-2.15155216	2.65109020	-0.33651503	
H	-2.53898819	1.37989110	-0.19339201	
H	-2.83885822	3.04694623	0.73589305	
S	1.84137814	2.83582322	0.44384503	
H	0.53151404	2.77332421	0.18494701	
H	2.06903816	3.65371328	-0.58495304	
S	0.19959501	-3.41630026	0.09403101	
H	0.51821004	-3.70035628	1.35763610	
H	1.23294510	-2.57916920	-0.03966500	
S	-3.24382925	-1.23986209	0.13705001	
H	-2.11188316	-1.94887615	0.08635901	
H	-3.69864628	-1.76409713	-1.00202208	
S	3.33830626	-0.85469107	-0.40374103	
H	2.88802622	0.36877303	-0.10869901	
H	4.20627532	-0.84710707	0.60917305	
P7				
S	1.23938309	-0.80138206	-1.10100108	
H	2.48543719	-0.84559907	-0.62287405	
H	1.25746710	0.52971404	-1.20868709	
S	0.43034803	3.13832824	-0.32125602	
H	-0.52982104	3.73506529	-1.02920708	

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H	-0.45351003	2.44903519	0.40662303	
S	-1.68652313	0.18339901	1.54582412	
H	-2.70193021	-0.29500602	0.82229006	
H	-0.77817906	-0.49260404	0.83633806	
S	-5.00120038	-1.32544110	-0.44487503	
H	-5.89947245	-1.56333312	0.51181604	
H	-5.77567042	-0.40185003	-1.01592008	
S	5.11761039	-1.14449709	0.32144502	
H	5.15535339	-1.68970713	1.53806512	
H	5.64643243	-2.23221517	-0.24062502	
P8				
S	-3.45154208	0.04077523	-0.09462212	
H	-3.50398942	-0.32894868	1.18613277	
H	-2.76183431	1.14658912	0.19369321	
S	-0.02612239	-1.66054459	-1.52658885	
H	-0.38451524	-2.12938911	-2.72356680	
H	-1.25607909	-1.21936997	-1.24558425	
S	3.43334037	0.04816414	-0.16812592	
H	3.16804169	1.35510311	-0.21484778	
H	2.39189329	-0.24300611	-0.95092219	
S	-0.05409002	2.41352839	-0.32003442	
H	-0.03229027	1.18325445	0.20033958	
H	-0.00241347	1.94223912	-1.56770583	
S	0.16579502	-0.77067303	2.20829422	
H	-0.11517996	-2.00653405	1.79061444	
H	1.41827233	-0.83994027	1.74908016	
P9				
S	-0.03996100	2.32121518	-0.80155006	
H	-1.31539810	2.37794718	-0.41272603	
H	-0.25879202	1.21465109	-1.51614812	
S	0.12445201	-0.57240605	2.20925817	
H	-1.00089808	-0.53377904	2.92515423	
H	-0.11830101	0.61250604	1.64309913	
S	-0.03823700	-1.93831215	-1.60723312	
H	1.17266009	-1.42454111	-1.83309014	
H	0.14238101	-1.89224915	-0.28463402	
S	3.27900625	0.11294801	-0.02393800	
H	3.20430625	-0.40424103	1.20383909	
H	2.43844419	1.10253208	0.28563102	
S	-3.18275024	0.05530500	0.17780701	
H	-4.20420932	-0.10072701	-0.66612405	
H	-2.34035018	-0.61208205	-0.61450105	
P10				
S	3.09230015	0.14454393	-0.30583966	
H	3.68865496	-0.16021766	-1.46024519	
H	2.27608916	-0.90896646	-0.38575777	
S	0.15505790	-0.21008494	2.08709555	
H	-0.28820643	-0.58326763	3.28910902	
H	-1.07885579	0.00749587	1.62354801	
S	-0.07755690	2.69581165	-0.67863159	
H	1.02065085	1.94104490	-0.57087461	
H	0.03266057	3.12591473	0.57943289	
S	-0.00309172	-2.47645456	-0.83409362	
H	-0.01606952	-3.57869059	-1.58698458	
H	0.12848635	-3.16712405	0.29826805	
S	-3.23044783	0.05178446	-0.29847670	
H	-2.31104002	0.97307539	-0.60233651	
H	-2.43255577	-0.93887313	-0.70502303	
P11				
S	3.95755817	-0.11275968	-0.15394765	
H	2.94251226	0.00768806	0.70608734	
H	4.24535659	1.18711545	-0.07176999	
S	0.37461224	-0.49022212	-1.65394283	
H	-0.45832442	0.03959791	-2.55227300	
H	1.45800864	-0.00903274	-2.26448567	

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S	-2.64885292	-1.87687791	0.24856226	
H	-1.90606488	-2.59976828	-0.59183055	
H	-1.58281278	-1.52849496	0.97470768	
S	-2.09722997	2.15149644	-0.41758671	
H	-2.56979998	0.90218218	-0.44536248	
H	-3.27124795	2.65234267	-0.02737561	
S	0.47616856	0.17089606	1.95968865	
H	-0.18133901	1.17227422	1.36968363	
H	0.32761417	0.69557088	3.17823911	
P12				
S	-3.01179323	-0.16038001	-0.57509904	
H	-3.44938827	0.07521301	0.66251105	
H	-2.19162617	0.89433407	-0.54974804	
S	0.13064901	-0.00032800	2.10160016	
H	1.10275608	0.90702607	2.21003017	
H	-0.04847900	-0.05013500	3.42316926	
S	0.12090501	-2.77515121	-0.42076903	
H	-0.95795807	-1.98586315	-0.43981203	
H	-0.23263402	-3.38788626	-1.55277212	
S	-0.19379901	2.77852021	-0.45783304	
H	0.13737201	3.40832326	-1.58699412	
H	0.85706807	1.95675715	-0.53930304	
S	2.90092322	0.11720401	-0.73168805	
H	2.07064216	-0.92861507	-0.65463605	
H	3.56209327	-0.24700602	0.36818303	
P13				
S	-2.53169519	-1.98146815	-0.99207507	
H	-1.21785809	-1.95747315	-0.75241006	
H	-2.82120222	-2.10450316	0.30474002	
S	-1.94604615	2.02357816	-1.14113009	
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