# Potential energy Surface for the ground electronic state of SSiH

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Sulfur-bearing molecular systems have attracted the interest of the astrophysical particularly after been observed in ISM and circumstellar regions [1]. This work presents an analytical function for the potential energy surface (PES) of the SSiH. The PES is constructed in the frame of the many-body expansion (MBE)[2]; dividing also each term into two-parts as proposed by Aguado and Paniagua [3]. *Ab initio* calculations, were carried out using Molpro 2012/2015 suite of programs [4]. Multi-reference configuration interaction with Davidson corrections, using the full valence complete-active-space self-consistent field wave function as reference was followed in the electronic structure calculations. Dunning basis sets AVTdZ and AVQdZ were used together with a three parameter scheme to extrapolate to the complete basis set limit. Topological features and exploratory dynamics calculations are discussed.

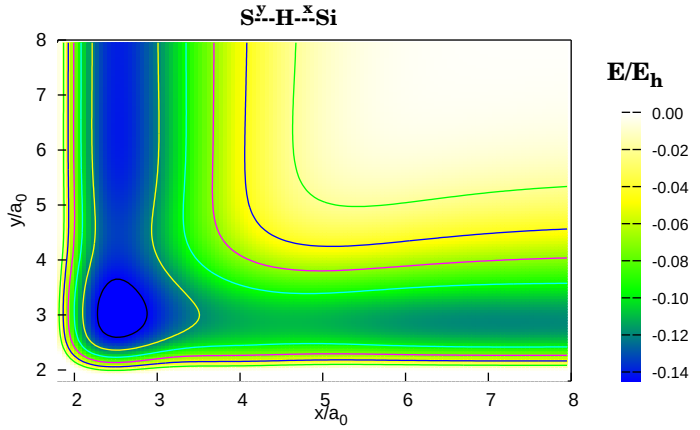


Figure 1: Contours plot for the analytically represented SSiH PES. The linear aproach of the sufur atom to the HSi molecule is depicted. Global minimum and saddle points can be viewed.

## References

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