RENNER-TELLER COUPLING IN H_2S^+: A COMPARISON OF THEORY WITH OPTICAL SPECTRA AND RECENT PFI AND MATI EXPERIMENTAL RESULTS

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Most of the early studies of H_2S^+ focussed on the comparison between the medium resolution photoelectron spectra of hydrogen sulphide with the emission spectrum of the A-X emission spectrum of the ion[a]. Recently, with the advent of improved photoelectron and pulsed field ionisation spectrometers[b], and also a mass-analysed threshold ionisation approach[c], there has been a renewal of interest in the spectroscopy and dynamics of the formation and the fragmentation of the hydrogen sulphide ion. In this contribution we compare the results derived from these new experiments with the analysis of the original emission spectra. The results are also compared with the predictions made using the stretch-bender approach to the calculation of the effects on the Renner-Teller coupling of large amplitude vibrational motion.

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[c] S. Han, T. Y. Kang, and S. K. Kim, J. Chem. Phys. 132, 124304 (2010)