

DATASET FOR PHOTODISSOCIATION OF SMALL MOLECULAR IONS

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Abstract. In recent decades, new experimental techniques and computational chemistry methods have gained importance in the study of interaction and dynamics of various molecules (Albert et al. 2020, Giuliani et al. 2014). Furthermore, one can see the current importance of studying the optical properties of several small molecules, as well as the accompanying atomic and molecular data (Srećković et al. 2020, Vujčić et al. 2023). One can note that precision spectroscopy of molecular ions has applications in quantum state controlled chemical reactions, lasers, ultra-short lasers, measurements of fundamental constants, astrochemistry (Vazquez-Carson et al. 2022, Wu, Zhenlin, et al. 2024). Moreover, photodissociation of diatomic molecular ions such as CaH⁺ and N₂⁺ and ultrafast spectroscopy with trapped molecular ions are of interest. Here we present spectroscopic information, i.e., data, of such systems involving hydrogen and calcium.

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