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[Lecture]

ASTROPHYSICALLY IMPORTANT MOLECULAR IONS: A NEW DATA FOR MODELING

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Abstract: Diagnostics, the development of models and simulations of intricate physical processes, and the interpretation of data from measurements all depend more and more on atomic and molecular (A&M) datasets, databases, and broader data environments (see e.g. Albert et al. 2020, Srećković et al. 2020). Precise spectroscopy of molecular ions pave the way for the investigation of tiny molecules such as SiH⁺, CaH⁺, and others that may be present astrophysically, which can in turn lead to better understanding of some stellar processes and formation of interstellar medium. We studied photodissociative processes involving calcium monohydride ions and gathered a cross-section dataset for simulating the aforementioned environments with various parameters (Vujčić et al. 2023). We studied calcium monohydride ion optical (photodissociative) processes and gathered cross-sectional data for the range of parameters that encompass modeling of the aforementioned environments.

Keywords: a&m data, astrochemistry, interstellar processes

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References

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