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[Abstract]

New Molecular Datasets for Modeling: Radiative Processes Involving Some Non-Symmetric Systems

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Abstract: This work explores radiative processes, namely photodissociation, in non-symmetric molecular systems with hydrogen and silicon. We provide computed molecular data, define electronic states, and derive cross-sections and spectrum absorption rate coefficients based on temperature and EUV/UV wavelengths. We provide a simple fitting formula for photodissociation cross-sections and spectral rate coefficients. Data can be used for improved photochemical modeling in laboratory plasmas and astrophysical settings (see e.g. Gnedin et al. 2009; Iacob et al. 2019; Albert et al. 2020; Srećković et al. 2022).

Keywords: data, modeling, molecules

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