

## NEW MOLECULAR DATA FOR ASTROCHEMICAL MODELLING

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Atomic and molecular (A&M) data and databases, which contain information about species, their identities, and processes, are critical and useful tools used in many fields of astrophysics, chemistry, and astro-informatics. Moreover methods of computational astrochemistry have become increasingly important in the last decades for the investigation of interaction and dynamics of small molecules enclosed in larger structures (Albert et al 2020, Srećković et al. 2020). In this contribution the role of some A&M processes has been studied.

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## References

Albert, Damien, et al. (2020). A decade with VAMDC: Results and ambitions. *Atoms* 8.4, 76.

Srećković, Ignjatović, L. M., & Dimitrijević, M. S. (2020). Photodestruction of diatomic molecular ions: Laboratory and astrophysical application. *Molecules*, 26(1), 151.