Astrochem: a fast time-dependent astrochemistry code

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Résumé

In this presentation, I will present Astrochem, a new code to compute the abundances of chemical species in the interstellar medium, as function of time. It is designed to study the chemistry in a variety of astronomical objects, including dense clouds, prestellar cores and protostars. A variety of gas phase processes are considered, as well as simple gas-grain interactions, such as the freeze-out and the desorption via several mechanisms (thermal desorption, cosmic-ray desorption and photo-desorption). Astrochem is fast: large networks containing several thousands of reactions (such as the KIDA network) are usually solved in a few seconds. Finally, it has a Python and a C interface, which allows to couple it with hydro-dynamical or MHD simulations of astronomical objects. Several recent results on the chemistry of prestellar cores and protostars obtained with this code will also be discussed.

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