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High performance numerical simulation of astrochemical problems

Astrochemistry plays an important role in the most of astrophysical processes on all stages of the universe life. Unfortunately, the most of the chemical processes can't be simulated in labs because of the physical conditions. We will show our latest high-performance computing code for numerical simulation of astrochemical problems. This code can be used as standalone application for simulation and visualisation of modelled chemical processes as well as a part of hydrodynamics codes for complex astrophysical simulation. We will show some test results for simple and complex astrochemical problems from hydrogen formation to stars astrochemistry as well as complex astrophysical simulation with hydrodynamics, chemistry, cooling/heating and other processes.

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