

TITLE: Former and future applications from the Astronomical Institute
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ABSTRACT. Our applications deal with cosmogony of the Solar System. Their common feature is a simulation of the dynamical evolution of a large number of considered bodies. By the hardware demands, we can divide the simulations to two classes: (1) the test particles (TPs) are regarded as massless bodies; independent CPUs are sufficient; (2) a part of TPs are regarded as the finite-mass objects; parallel programming (fast communication of all CPUs with a global memory) is necessary.

Here, we present one former simulation (1-st class) of the comet-Oort-cloud formation as well as our future plans. We intend:

1. to improve our simulation of the Oort-cloud formation (1-st cl.)
2. to perform the simulations (1-st cl.) of the dynamical structure of meteoroid streams.

Another simulations (2-nd cl.) would:

3. solve the problem of the self-excitation of proto-planetary disc
4. deal with the unified theory of the formation of Jovian planets and reservoirs of small bodies.