IMPACT OF VARYING INTEGRATION TIME STEP ON THE TRANSFER OF ASTEROIDS

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In this work, we investigate how the size of the integration step may affect the result of dynamical transport in the Solar System. As an example, we use three Near-Earth asteroids: 3200 Phaethon, 2005 UD, and 1999 YC (recently studied in Knežević & Todorović, 2024, A&A, 688, A121) and a scenario of their arrival from the 5:2 mean motion resonance with Jupiter. The calculations are performed with the MERCURIUS integrator from the REBOUND Python package. In addition to the integration step, we varied the size of the orbital inclination around the targets. Our results show that the integration time step plays an important role in providing the results, highlighting their significance for the overall dynamical origin conclusion.