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Stability of Lagrangian relative equilibria for the roto-translational three-body problem

A relative equilibrium in the N -body problem is a solution for which the whole system rotates (rigidly) around a fixed axis with constant angular velocity. Usually one thinks of the bodies as point masses interacting under a Newtonian potential. Nevertheless, perturbations to this potential arise when one considers the three-dimensional aspect of the bodies. In this talk we discuss the application of the reduced energy-momentum method to the study of the stability of the roto-translational three-body problem, with perturbations to the Newtonian potential due to oblateness.

This is a joint work with Cristina Stoica.