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Almost-collision orbits in the spatial three-body problem

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In a system of particles, Almost-collision orbits are collisionless orbits along which two bodies become arbitrarily close to each other—the lower limit of their distance is zero but the upper limit is strictly positive. The existence of such orbits was shown in the restricted planar circular three-body problem by A. Chenciner and J. Llibre, and later, in the planar three-body problem by J. Féjoz. In the spatial three-body problem, the existence of a set of positive measure of such orbits was predicted by C. Marchal. In this talk, I shall present a proof of Marchal’s prediction.

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