Seminario de análisis matemático y aplicaciones
Analisi matematikoa eta aplikazioak mintegia

Dynamics of rigid bodies of various sizes and masses in a two dimensional incompressible perfect fluid

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ABSTRACT: We will consider the motion of rigid bodies immersed in a two-dimensional incompressible perfect fluid. For such a system the Cauchy problem with a bounded initial vorticity admits a unique solution up to the first collision. We will give a reformulation of the PDE system which highlights geodesic aspects linked to the added mass effect, gyroscopic features generalizing the Kutta-Joukowski-type lift force and confinement force. Then we will tackle the case where some of the rigid bodies shrink to pointwise particles, some of them with constant mass, the others with vanishing mass. This talk will cover some joint works with Olivier Glass, Christophe Lacave and Alexandre Munnier.

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Matematika ataleko mintegi gela

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