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*Classification of coadjoint orbits for symplectomorphism groups of surfaces with boundary*

Hydrodynamical Euler's equation describes the motion of an ideal incompressible fluid on a Riemannian manifold. In this talk, I will start by explaining how the kinematics of Euler's equation is related to the coadjoint orbits of the group of volume-preserving diffeomorphisms. In dimension two the volume-preserving diffeomorphisms coincide with the symplectomorphisms. The classification of generic coadjoint orbits for symplectomorphism groups of closed surfaces was obtained by Izosimov, Khesin, and Mousavi in 2016. I will explain how to generalize this result to the case of symplectic surfaces with boundary.