

# Coadjoint orbits relevant to ideal fluid dynamics

Cornelia Vizman

## Abstract:

We explore coadjoint orbits for the group of volume preserving diffeomorphisms that are modeled on nonlinear Grassmannians of submanifolds of codimension one. We focus on vortex loops in 2D (collections of point vortices) and on vortex sheets in 3D (collections of vortex filaments). We also determine a Feynman-Onsager condition for their prequantizability.