

1137-49-317

Javier A Morales Delgado*, javierm1@cscamm.umd.edu. *Least action principles with applications to gradient flows and kinetic equations.*

In this talk, we introduce a variational formulation for a family of kinetic reaction-diffusion and their connection to Lagrangian dynamical systems. Such a formulation uses a new class of transportation costs between positive measures, and it generalizes the notion of gradient flows. We use this class to build solutions to reaction-diffusion equations with drift subject to boundary conditions via an extension of De Giorgi's interpolation method for the entropy functional. Additionally, we use this variational formulation to obtain results for the dynamics of the Kuramoto Sakaguchi equation. (Received February 06, 2018)