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Transport processes and dynamics in chemical reaction models and in oceanic models

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Abstract

In this talk, we will explore transport of a specific example in chemical reactions. The potential energy surface of our model has four wells and an index-2 saddle. For this model, we will analyze the influence that coupling both degrees of freedom of the system and breaking the symmetry of the problem have on the geometrical template of phase space structures that characterizes reaction, using the method of Lagrangian Descriptors. Also we will present the application of the method of Lagrangian Descriptors and a new uncertainty quantification measure appropriate for quantifying the performance of models in assessing for example the origin or source of a given observation.

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