

Abstract Submitted
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Long-term description of chaotic mixing induced by resonance phenomena DMITRI VAINCHTEIN, SAHAND HARIRI AKBARI, Temple University, ROMAN GRIGORIEV, Georgia Institute of Technology — We present a quantitative long-term theory of resonant mixing in 3-D near-integrable flows. We illustrate that such resonance phenomena as resonance and separatrix crossings accelerate mixing by causing the jumps of adiabatic invariants. The resulting mixing can be described in terms of a single diffusion-type equation. We show what modifications must be made to accommodate the effects of the boundaries of the domain and possible correlations between the successive jumps.

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