

Abstract Submitted  
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**Diffusion Effects on the Chaotic Fluid Mixing for AC Electrothermal Flows by Blinking Vortices** SOPHIE LOIRE, IGOR MEZIC, UCSB — We present a computational study of AC electrothermal chaotic mixing using blinking of asymmetric electrothermal vortices. Electrothermal flows are modeled by finite element method using COMSOL software based on an enhanced electrothermal model. We use the mix-norm on numerical trajectory simulations to evaluate mixing at different scales including the layering of fluid interfaces by the flow, a keypoint for efficient mixing. The blinking vortices method greatly improve mixing efficiency. The effect of blinking frequency and particle size is studied. A large influence of diffusion on the mixing efficiency is observed as well as on the optimal blinking frequency.

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