

Abstract Submitted
for the DFD09 Meeting of
The American Physical Society

Chaotic mixing in a plane channel with rotating arc walls KAMAL EL OMARI, ADIL ACHHOUD, YVES LE GUER, University of Pau - France, LATEP TEAM — The effect of chaotic advection on the advection-diffusion of passive species is investigated for a new type of open flow mixer. This mixer is of active type with a perturbation of the flow imposed by three rotating circular arc walls (RAW) in a two-dimensional plane channel flow. Different steady flow topologies can be obtained depending on the respective directions of the RAW. Efficient stirring protocols were designed by the combination of some steady streamline patterns giving rise to chaotic mixing. The dynamical behavior of the mixing induced by these protocols were compared and discussed for different control parameters.

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Date submitted: 31 Jul 2009

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