

Abstract Submitted
for the DFD09 Meeting of
The American Physical Society

Measurements of the Motion and Orientation of Rods in 2D Chaotic flow SHIMA PARSA MOGHADDAM, GREG A. VOTH, Wesleyan University — We study the dynamics of rod particles in a two dimensional time-periodic flow driven by Lorentz force. Video particle tracking is used to make accurate measurements of the motion and orientation of fluorescent rods along with the fluid velocity field. When the rods are very short, their rotation rate is dictated by the local velocity gradients. We study the deviations from this simple model as the rod length increases. The rods partially align with the stretching direction defined by the eigenvectors of the Cauchy-Green strain tensor.

Shima Parsa Moghaddam
student

Date submitted: 11 Aug 2009

Electronic form version 1.4