

Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

Vlasov-Fokker-Planck Modeling of Ion Acoustic Waves in Inertial Confinement Fusion Plasmas ARCHIS JOGLEKAR, BEN WINJUM, ADAM TABLEMAN, MICHAIL TZOUFRAS, WARREN MORI, University of California - Los Angeles — Using OSHUN, a 2D3P Vlasov-Fokker-Planck (VFP) code, we examine ion acoustic wave dynamics in regimes relevant to inertial confinement fusion. The VFP methodology is uniquely suited to modeling high energy density plasmas where Coulomb collisions can be important in mediating kinetic effects. A new capability has been added to OSHUN to model ions hydrodynamically. We examine ion acoustic wave physics for a range of electron temperatures and densities in the presence of inverse-bremsstrahlung heating and self-generated magnetic fields, and we comment on their relevance to ICF-relevant physics, such as in thermal transport and in the evolution of instabilities such as stimulated Brillouin scattering for which a thorough understanding of ion physics is essential.

Archis Joglekar
University of California - Los Angeles

Date submitted: 15 Jul 2016

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