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Vlasov-Fokker-Planck and PIC with Collisions Modeling of Stimulated Raman Scattering in the presence of Inverse-Bremsstrahlung heating in plasmas relevant to Inertial Confinement Fusion[1] ARCHIS JOGLEKAR, BENJAMIN WINJUM, WARREN MORI, Univ of California - Los Angeles — Laser energy is absorbed in inertial fusion plasmas through the inverse-bremsstrahlung process. Theoretical work has predicted the evolution of non-Maxwellian electron distribution functions in the presence of inverse-bremsstrahlung heating [1], where the velocity gradient of the distribution function is relaxed at $v2v_{th}$ resulting in lower-than-Maxwellian Landau damping rates for electron plasma waves relevant to inertial fusion[2]. Here, we present the first self-consistent modeling of this process using OSHUN, a Vlasov Fokker Planck code, for conditions relevant to inertial fusion. We find enhanced SRS growth rates due to this effect in the collisional electron plasmas in the Trident experiments [3], as well as in the laser entrance hole of hohlraums during the picket pulse at the National Ignition Facility [4]. In hotter or low Z, low density plasmas, the effect is muted due to the lower collisionallity. Preliminary comparison of results from SRS simulations between OSHUN and OSIRIS with collisions will also be presented. [1] Langdon, Phys. Rev. Lett. 1980 [2] Afeyan et. al Phys. Rev. Lett. 1998 [3] Montgomery et. al Phys. Plasmas 2002 [4] Dewald et. al Phys. Rev. Lett. 2017

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Archis Joglekar
Univ of California - Los Angeles

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