

Abstract Submitted  
for the DPP19 Meeting of  
The American Physical Society

**Modeling stimulated Raman scattering with laser bandwidth and external magnetic field using Particle-in-cell method<sup>1</sup>** HAN WEN, BENJAMIN WINJUM, FRANK TSUNG, WARREN MORI, University of California, Los Angeles — Stimulated Raman scattering (SRS) is of great concern in inertial confinement fusion experiments and will be an issue in the design of future ignition scale direct and indirect drive targets. Multiple schemes have been proposed to mitigate SRS, including applying temporal bandwidth and external magnetic fields. Large scale particle-in-cell (PIC) simulations have been carried out to study the bandwidth effects on SRS using the general antenna implemented in our PIC code OSIRIS. Simulation results show that although the reflectivity due to SRS decreases as the laser bandwidth increases, SRS can still occur with laser bandwidth up to 0.7% of laser frequency. The simulations also show that the details of the behavior of SRS changes as the bandwidth increase. Applying external magnetic field can add additional damping to nonlinear electron plasma waves and thus SRS reflectivity is further reduced.

<sup>1</sup>Work supported by DOE.

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Date submitted: 03 Jul 2019

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