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Stimulated Raman backscatter leading to electron acoustic Thomson scatter DAVID J. STROZZI, E.A. WILLIAMS, A.B. LANGDON, Lawrence Livermore National Lab — 1-D Eulerian Vlasov-Maxwell simulations of stimulated Raman backscatter show kinetic inflation due to electron trapping in the plasma wave, as previously reported. Trapping distorts the electron distribution, which results in new electrostatic modes, including beam acoustic modes (BAMs) [L. Yin et al., PRE **73**, 025401 (2006)] and an electron acoustic wave (EAW). Light from pump scattering off the EAW is also observed, similar to experimental measurements interpreted as stimulated electron acoustic scatter [D. S. Montgomery et al., PRL **87**, 155001 (2001)]. However, parametric interaction of BAMs excites our EAW, and the laser scatters off subsequent fluctuations (electron acoustic Thomson scatter). Linear analysis using the Gauss-Hermite projection of f_e reveals BAMs, sometimes unstable *without coupling to light waves*, and a heavily-damped EAW. This linear EAW differs from the nonlinear, undamped EAW due to trapping discussed by others. We explore the role in kinetically-enhanced Raman backscatter of inhomogeneity, ion dynamics, and transverse sideloss. Work performed under Dept. of Energy Contract No.W-7405-Eng-48. UCRL-ABS-222958.

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