Kinetic Simulations of Stimulated Raman Scattering W. ROZ-
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Russia, C. CAPJACK, University of Alberta, Edmonton, Canada — Results of PIC
simulations of the stimulated Raman scattering in one and two spatial dimensions
are discussed. 2D simulation results at large kL/kD values are consistent with re-
sults by Yin et al. Phys. Plasmas 15, 013109 (2007). However, our interpretation
differs in stressing the SRS reflectivity randomness due to frequency shift and trans-
verse modulations of Langmuir waves by (i) Weibel instability due to the current
of trapped particles and (ii) trapped particle modulational instability. Random-
ness due to the frequency shift is responsible for the first saturation of SRS. In 1D
PIC simulations in inhomogeneous plasmas we have studied the interplay between
trapped particle nonlinear frequency shift and plasma density inhomogeneity.

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