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**The numerical study of Stimulated Raman and Brillouin Scattering in multiple laser beams** CHUNYANG ZHENG, LIANG HAO, Institute of Applied Physics and Computational Mathematics, Beijing — Two dimensional simulations of multi-beam laser-plasma interactions have been performed in the 2D particle-in-cell (PIC) code. The Raman or Brillouin amplification and competition between them in the presence of strong cross beam energy transfer are discussed. We observe that the total backward scattering level can be significantly enhanced or reduced by varying the wavelength separations among the interaction beams. The effects of particle trapping and side scattering which are responsible for the nonlinear saturation of SRS or SBS are also analyzed.

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