

Abstract Submitted  
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**Collisional Effects on Hot-Electron Generation in Two-Plasmon-Decay Instability in Inertial Confinement Fusion** J. LI, R. YAN, C. REN, A.V. MAXIMOV, Laboratory for Laser Energetics, U. of Rochester, W.B. MORI, F.S. TSUNG, U. of California, Los Angeles — Recent particle-in-cell (PIC) and fluid simulations for the study of the collisional effects on hot-electron generation in two-plasmon-decay (TPD) instability in the regime relevant to experiments on the OMEGA Laser System are presented. The collision package in the PIC code *OSIRIS* has been benchmarked and shown to produce proper electron–ion collision rates in PIC simulations. Collisions have been found to significantly reduce TPD hot-electron generation. This reduction is partially caused by collisional suppression of the non-linear TPD modes away from the quarter-critical surface that were found to form the first stage of hot-electron acceleration.<sup>1</sup> This work was supported by the U.S. Department of Energy under Cooperative Agreement Nos. DE-FG02-06ER54879 and DE-FC52-08NA28302, by NSF PHY-0903797, and by NSFC 11129503.

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J. Li  
Laboratory for Laser Energetics, U. of Rochester

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