

Abstract Submitted
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Competition between convective stimulated Raman scattering and convective two-plasmon decay in hybrid-drive regime CHENGZHUO XIAO, Peking University, ZHANJUN LIU, CHUNYANG ZHENG, Institute of Applied Physics and Computational Mathematics, XIANTU HE, Peking University — Hybrid-drive method for inertial confinement fusion (ICF), which combines direct-drive ICF and indirect-drive ICF, has a higher laser intensity and large density scale length than conventional indirect-drive ICF. The thresholds for convective stimulated Raman scattering (SRS) and convective two-plasmon decay (TPD) near the quarter-critical density are derived. The parameter space lies beyond or just near the thresholds, which may trigger strong interactions between convective SRS and TPD. Two dimensional particle-in-cell (PIC) simulations have been performed to demonstrate the interactions. We have also studied the temperature effects which may cause the frequency mismatch in the linear stage and strongly suppress TPD.

Chengzhuo Xiao
Peking University

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