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Controlling stimulated Raman scattering by multi-color light in inertial confinement fusions ZHANJUN LIU, CHUNYANG ZHENG, Institute of Applied Physics and Computational Mathematics — A method is put forward to control the stimulated Raman scattering in inertial confinement fusions. Using different frequency lights combined with 3ω light can control the Raman scattering of 3ω light. Numerical simulation results validate this method. The Raman scattering of 3ωlight can be prevented to develop by using another 2ω light, which ensures the 3ω light depositing energy to the desired place. The Raman or Brillouin scattering of 3ωlight can modify the electron density. And the inverse bremsstrahlung absorption of 2ω light increase the electron temperature and then decrease the density in the laser path due to the pressure equilibrium. The increased inhomogenous of plasma density and electrons temperature and low density can decrease the scattering level of 3ω light.

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