

Third Harmonic Generation through Stimulated Raman Scattering in Magnetized Plasma with Hermite cosh Gaussian Laser Beam

Friday, 17 November 2023 14:45 (15 minutes)

Stimulated Raman backward scattering of a laser beam propagating in a homogeneous plasma is investigated in the presence of static magnetic field. The laser decays into an upper hybrid wave and a down-shifted sideband wave as it travels through plasma. A non-linear ponderomotive force acts on the plasma electrons which drives the excited upper hybrid wave. The upper hybrid wave couples with the incident wave to drive the sideband. Non-linear current density and ponderomotive force is obtained by using Fluid Model. Dispersion relation of the scattered sideband wave and growth rate instability is obtained. This growth rate suppress when the static magnetic field is increased.

Topics

Session B. Laser physics and modern optoelectronics

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Session Classification: Spectroscopy techniques and applications