The Effect of an Axial dc-Magnetic Field on Raman Backward Scattering

By

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Abstract

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In this work, Raman backscattering instability in homogeneous and nonhomogeneous plasma in the presence of an axial dc-magnetic field whose lines are parallel to the propagation of the incident electromagnetic wave; is considered.

Analytical expressions for the growth rates, threshold intensities and the amplification factors for the right-hand and left-hand circularly polarized pump waves have been obtained.

It has been shown that the presence of an axial dc-magnetic field affects significantly the growth rates, threshold intensities and amplification factors for backward Raman scattering.