AMPLIFICATION OF WAVES AT FUNDAMENTAL FREQUENCIES IN AN INHOMOGENEOUS PLASMA

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Amplification of waves at fundamental frequency, in presence of ion-acoustic wave turbulence has been considered in an inhomogeneous plasma. The thermal particles which are strongly in phase relation with low frequency turbulent field are accelerated. These accelerated particles transfer their energy to Langmuir wave nonlinearly through a modulated field. We have obtained nonlinear dispersion relation for Langmuir wave involving density gradient as well as confining field gradient. This nonlinear dispersion relation may be useful for investigation of amplification of waves at fundamental frequencies in inhomogeneous plasma particularly when density gradient is strong and associated confining field gradient is not ignorable.