

Abstract Submitted
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Two Stream Instability in Magnetized Warm Plasma under the Ionization Effect - JYOTI, HITENDRA K. MALIK, IIT Delhi — Two - stream instability is considered in the presence of magnetic field in inhomogeneous plasma. The continuity and the momentum equation which take into account the ionization constant are formulated for ions and the electrons including the effect of finite temperature of ions along with the ionization effect. Using normal mode analysis along with linear approximation, potential is found from Poisson's equation neglecting higher order perturbed terms. The behavior of growth rate with magnetic field and the propagation angle along with ionization constant has been studied with different plasma oscillation wavelength to Debye length ratio for both the laboratory as well as the space plasma parameters. We observe two types of instability in both the cases. In case of laboratory plasma one of the instability is growing at larger plasma oscillation wavelength and another one at lower wavelength while in the case of space plasma both the instabilities grow only at smaller plasma oscillation wavelength but with different growth rates. All the instabilities has higher growth rate at smaller wave length of oscillations. Effect of finite ion temperature is studied with respect to different electron temperature both in the laboratory as well as in space plasma.

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