



Effect of Suprathermal Particles on EMEC Instability in Kappa-Maxwellian Distributed Space Plasmas

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The present study reveals the role of suprathermal particles on the destabilization of EMEC instability modelled by kappa-Maxwellian distribution and the results are compared with bi-Maxwellian results. Presence of suprathermal particles in the velocity distribution functions indicates the highly nonthermal state of plasma having large amount of free energy which is expected to enhance the kinetic instabilities. However, most of the studies on EMEC waves using bi-kappa model showed the inhibiting effect of suprathermal particles on the instability. To address this effect in kappa-Maxwellian plasmas, we proposed two variants of kappa-Maxwellian

model to investigate the role of suprathermal particles on the EMEC instability in kappa-Maxwellian plasma.

References

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