

## Study of Kinetic Alfvén waves in space plasmas with electron having Kappa distribution

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A theoretical model is developed by assuming a three component plasma comprising of the cold background ions, hot electrons having kappa distribution and hot ion beams to study the generation of kinetic Alfvén waves (KAWs). The background ions and beam ions are considered Maxwellian and the ion beam is only allowed to have velocity shear and non-uniform streaming. A dispersion relation for the excitation of the kinetic Alfvén waves (KAWs) is analyzed. The effect of plasma parameters like number density, propagation angle, temperature, kappa etc. on the excitation of KAWs is examined. A comparative study of the results obtained from this model will be carried out with a plasma model having all the three species as Maxwellian. Further, an application of the theoretical model will be discussed relevant in the Earth's magnetosphere.

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