

# Sobre las propiedades dispersivas de ondas cinéticas de Alfvén ante la presencia de iones pesados en plasmas espaciales.

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## Introducción

Kinetic Alfvén Waves (KAWs) are right-handed polarized kinetic scale Alfvénic waves that propagate at quasi-perpendicular wave-normal angles [1, 2]. These waves are relevant for the study of space plasmas as they play a crucial role in several kinetic processes, such as the energy transfer from larger scales toward electron scales [3]. KAW have mainly been studied in electron-proton plasmas. However, space plasmas are constituted by a varied range of particle populations [4,5]. We analyze the dependence of the dispersion relation of KAWs on the density and plasma beta parameter of the different components in a magnetospheric-like plasma. By carrying out an extensive study of the dispersion properties of Alfvénic waves, we show that oxygen ions allow these waves to acquire right-hand polarization at lower angles than in the electron-proton plasma, enabling KAW to propagate at relatively low angles with respect to the geomagnetic field, which could explain satellite measurements in the ring current region [6].

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