

# TITLE: STUDY OF THE PITCH ANGLE VARIATION OF CHARGED PARTICLES, WITH RELATIVISTIC VELOCITY, UNDER ACTION OF DISTURBED GEOMAGNETIC FIELD.

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**Abstract:** Chorus waves are a mode of whistler waves with RCP (Right-hand Circularly Polarized waves) polarization that can propagate parallel to the Earth's magnetic field with frequencies between hundreds of tens of Hz to a few kHz. As they travel, they can interact with relativistic energetic electrons in the outer Van Allen radiation belt-when the resonance condition is met, which can cause electron losses. This work aims to evaluate the variation of the speed of an electron with relativistic energy in a dipolar magnetic field disturbed by the occurrence of chorus waves. This assessment can help to understand how the wave-particle interaction occurred in an electron loss event on September 12, 2014. The solution of the motion equation was obtained numerically, to calculate the pitch angle variation. The data of the waves electromagnetic fields of the wave were obtained from the Van Allen Probes for electrons in the energy range from 2 to 5 MeV in the equatorial zone and  $L \geq 5.5$ .

As a result, we present the variation of the electron pitch angle on the equatorial zone. From the results obtained, we concluded that the pitch angle variation is related to the frequency waves and particle's initial energy and position.

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