

ΑΡΙΣΤΟΤΕΛΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΕΣΣΑΛΟΝΙΚΗΣ

ΤΜΗΜΑ ΦΥΣΙΚΗΣ

ΣΕΜΙΝΑΡΙΟ

ΤΟΜΕΑΣ ΑΣΤΡΟΦΥΣΙΚΗΣ, ΑΣΤΡΟΝΟΜΙΑΣ ΚΑΙ
ΜΗΧΑΝΙΚΗΣ

Θέμα: “Ultra Low Frequency (ULF) Waves in the Magnetosphere: Excitation mechanisms, Spatial distribution and their interaction with energetic particle populations”

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Ώρα: **12:00**

Περίληψη:

The Earth's magnetosphere often undergoes oscillations in the Ultra Low Frequency (ULF) range, roughly 1 mHz to 1 Hz (periods 1 to 1000 sec), which are a fundamental response of the magnetosphere to various external or internal drivers. ULF waves can have significant effects, such as enhancing the radial diffusion of radiation belt energetic electrons, which have drift periods of the same order. We will discuss observations of ULF wave events as well as statistical studies of the distribution of ULF waves, based on which we constructed models that simulate the interaction of ULF waves with energetic particles. We will also discuss the importance of knowledge of the azimuthal mode numbers of ULF waves for wave-particle interactions, and will present calculations of the waves' mode numbers and phase velocities, as performed from observations of phase-differences on the ground and in space.