

ΑΡΙΣΤΟΤΕΛΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΕΣΣΑΛΟΝΙΚΗΣ
ΤΜΗΜΑ ΦΥΣΙΚΗΣ

ΣΕΜΙΝΑΡΙΟ

ΤΟΜΕΑΣ ΑΣΤΡΟΦΥΣΙΚΗΣ, ΑΣΤΡΟΝΟΜΙΑΣ ΚΑΙ
ΜΗΧΑΝΙΚΗΣ

Θέμα: The carbon cycle emission as a diagnostic tool for the interstellar medium properties

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Περίληψη:

Carbon is one of the most abundant elements in the Universe and present to both local and distant galaxies. It can be found in three forms, known as the "carbon cycle": ionized (C⁺), atomic (C), and molecular in the form of carbon monoxide (CO). Its chemical state is determined by the environmental parameters of the interstellar medium. Consequently, we can use the emission lines of the carbon cycle to estimate these environmental parameters, which ultimately shape the density distribution of the interstellar gas in galaxies. Through numerical modelling and comparison with observational data, I will discuss how each of the aforementioned line emissions can be used as a diagnostic of the chemical and dynamical state of the interstellar medium.