



University of Crete  
Department of Physics

## 40 Years Anniversary Colloquium Series

Thursday, 25 October 2018 | 17:00 – 18:00, Seminar Room, 3rd floor

### Study of the solar corona and transition region through Extreme Ultraviolet spectroscopy

**Dr. Costis Gontikakis**

*Research Center for Astronomy & Applied Mathematics, Academy of Athens, Greece*

#### **ABSTRACT**

*The solar transition region is a component of the solar atmosphere where the plasma temperature varies from 10000 Kelvin to one million Kelvin, and plays an important role in coronal heating. The solar corona, because of this heating is more than one hundred times hotter than the solar surface, something known from the 1940s but still not fully understood.*

*We will present the solar emission spectrum in the Extreme Ultra Violet wavelengths and show how we can derive important characteristics of the solar atmosphere by studying it. Moreover, we will present spectra of the Si IV 1393 Angstrom and 1402 Angstrom doublet emission spectral lines emitted from transition region plasma and observed with the new Interface Region Imaging Spectrograph (IRIS). Analysis of the spectral doublets gives the possibility to understand if the emission is caused by electron ion collisions or by resonant scattering of photons. This knowledge will refine the measurement of plasma quantities such as temperature and electron densities.*