Classifying Damped Lyman Alpha Systems (DLAs) with their metal lines, a new window to the high redshift cosmos

Andreu Arinyo I Prats*[1]

[1]Institut de Ciencies del Cosmos, Universitat de Barcelona – Spain

Abstract

With large spectroscopic surveys like SDSS-BOSS, we have access to large amounts of absorbing systems in quasar spectra. Among these, DLAs contain most of the neutral hydrogen in the universe. We use the DLA metal lines to divide DLAs into groups of metallicity from spectra of low signal-to-noise that are typical of the BOSS survey, with the aim to measure the bias factor of DLAs as a function of this parameter from the amplitude of the cross-correlation with the Lyman alpha forest, and thereby calibrate the relationship between host halo mass and DLA metallicity for DLAs populations. This technique opens a new window to study the origin of a wide class of metal-line absorption systems.

*Speaker