

**The MOSDEF Survey: Study of Rest-frame Optical Properties of
Galaxies at $1.5 < z < 3.5$**

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Abstract

The MOSFIRE Deep Evolution Field (MOSDEF) Survey is designed to exploit new capabilities of the MOSFIRE instrument on the Keck Telescope to study the evolution of rest-frame optical spectra for ~ 1500 galaxies in the CANDELS fields, spanning the redshift range $1.5 < z < 3.5$. Despite the critical importance of this cosmic epoch for assembly of galaxies, star formation activities and black hole growth, our knowledge of the spectroscopic properties of galaxies has been very limited. This talk presents the first scientific results from the MOSDEF survey. Using rest-frame optical spectroscopy, we target emission and absorption line features between 3700 \AA and 6800 \AA , spanning the full diversity of stellar populations and dust extinction over a large dynamic range in stellar mass. We study the evolution of Mass-Metallicity and Mass-Star Formation Rate (SFR) relations with redshift, the BPT diagrams at high redshifts ($z \sim 2.3$) and dust and excitation properties of star-forming galaxies at $z \sim 1.4 - 2.6$. I also study the effect of the outflows on the physical properties of galaxies (mass, metallicity, star formation rate) at the redshifts of the MOSDEF galaxies.