Abstract:

This study deduces that reionization began at a redshift of *z=17.82* and ended at a redshift of *z=7±1.8.* This is calculated by directly applying the dynamics of star formation and the ionization rate of neutral hydrogen in the Intergalactic Medium. A photometry strategy consisting of 3 multi-band surveys is proposed in order to observe Lyman Break Galaxies across redshifts 6-17. The surveys will locate 100.5±37.0, 138.7±100.6, 358.1 ± 158.6 galaxies in redshift ranges 6-8.5, 8.5-10 and 10-17 respectively. These surveys will be completed by the James Webb Space Telescope and Euclid which are planned for launch in the coming decade. A follow up spectroscopy survey will be used to confirm the redshift and properties of 24, 4 and 48 galaxies in these 3 surveys respectively. The spectroscopy will be carried out using James Webb Space Telescope and a combination of single and multi-slit spectroscopy. It is shown that the use of known gravitational lenses, located between redshift 0.5 to 0.7, is very beneficial for discovering high redshift candidates as it can increase the depth of surveys by up to 3 magnitudes.