

WST - the Wide-field Spectroscopic Telescope: surveying the Universe in the 2040's and beyond



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WEAVE and 4MOST: the lessons we (can) learn

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The spectrographs WEAVE and 4MOST, both on 4m class telescopes, are two predecessors to the innovative WST facility.

Both spectrographs are characterized by high multiplexing capabilities over a large field of view (i.e., 3-4 sq. deg), wide optical spectral coverage (3700 - 9700 Å), and optimal resolution ($R=4000-7000$). StePS is the acronym for two surveys that make use of the WEAVE and 4MOST instruments to study the properties of stellar populations of massive galaxies at intermediate redshifts (i.e., $0.3 < z < 0.7-0.8$), where the instrumental spectral window covers all the usual optical features and the beginning of the UV range.

The larger collecting area of WST (12 m) will offer a unique opportunity to extend these studies to higher redshifts. At redshifts above 1, the Universe and the galaxies within it become increasingly younger, while the observed spectral window shifts to cover the UV range ($\lambda < 4000$ Å) and the optical range moves beyond reach.

In this talk, we will explore the potential of utilizing the UV range to study the stellar population properties of galaxies at high redshift. Through simulations, we will compare the effectiveness of UV-based indicators in deriving the properties of young galaxy populations with the results obtained using the optical range. Furthermore, the critical limitations of current models in accurately representing this range will be highlighted and discussed.

We will finally discuss how the WEAVE-StePS and 4MOST-StePS surveys will enable the 'calibration' of the UV range in terms of galaxy evolution studies.

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