Helium abundance determination using a multi-dimensional fitting

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The light elements content has important cosmological implications since they represent a keystone in the Big Bang cosmology. Low metallicity star formation regions, Fig.1, can be employed to calculate the primordial helium abundance (Peimbert et al 2007). However, predicting this element abundance with the sufficient precision involves dealing with many systematic and random error sources.

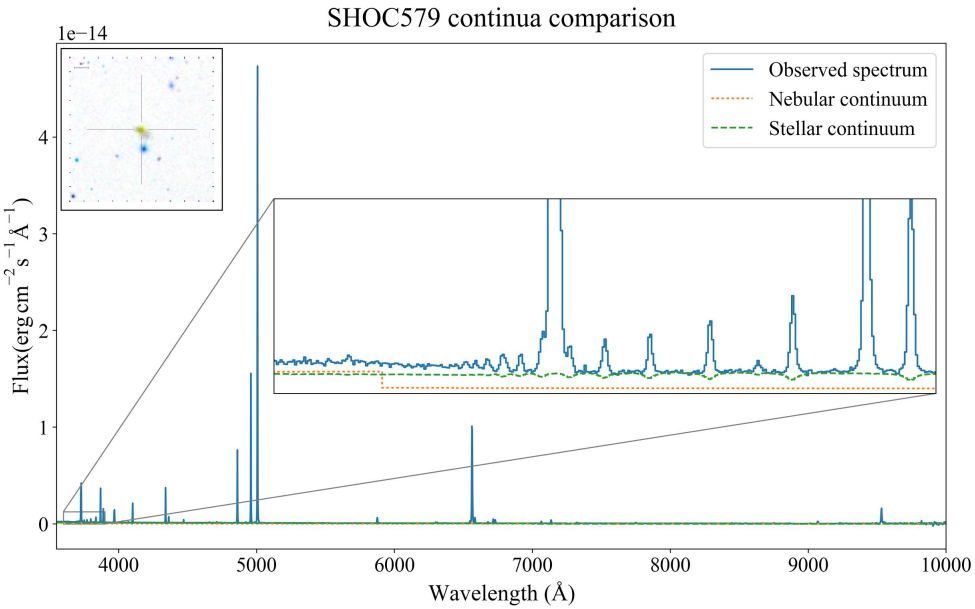

Fig.1: Observed spectrum for SHOC579 galaxy. The detail in the image displays the nebular and stellar components fitted for the galaxy

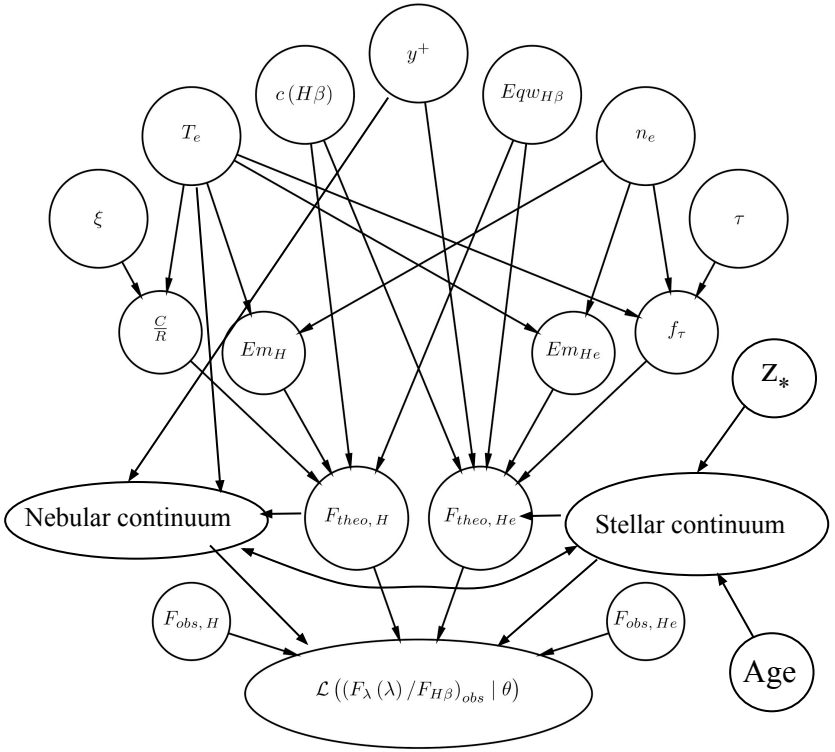

Fig.2: Model Network with all the parameters fitted

To improve the chemical analysis, we propose a multi-dimensional, multi-spectral component fitting, Fig.2. This model fits the emission features from recombination (Aver et al 2016) and collisional excited lines (Asari et al 2016), as well as, the nebular and stellar components (Sanchez 2015)