Paris workshop on Bayesian Deep Learning for Cosmology and Time Domain Astrophysics 3rd ed.



ID de Contribution: 27

Type: Talk

Outliers and Hidden Relations in Galaxy Spectroscopy and Photometry

mercredi 21 mai 2025 15:30 (20 minutes)

I will present the neural network architect "spender", which is specifically designed for galaxy spectra at variable redshifts. Trained in 500k SDSS or DESI spectra, it is capable of automatically detecting highly meaningful outliers as well as making predictions of the physical state of the galaxies, thus serving as a summary for simulation-based inference approaches. Recently, my group has further demonstrated that the representations learned from optical spectra provide accurate prediction of IR photometry, a connection that is not captured by current physical SED modeling methods. I will also discuss extensions of this work to exoplanets and quasar spectra to demonstrate the strengths and versatility of this approach.

Author:MELCHIOR, Peter (Princeton University)Orateur:MELCHIOR, Peter (Princeton University)Classification de Session:Static sky cosmology