

# Autoencoders for AGN identification in the DESI Y3 survey

*mardi 10 juin 2025 12:30 (20 minutes)*

We describe a machine learning approach to multi-wavelength Active galactic nuclei (AGN) identification for host galaxies within the DESI survey. AGNs emit light in all wavelengths in the electromagnetic spectrum, it is difficult to create an AGN selection that is fully complete. The identification of AGNs is key to understanding not only their astrophysics, being an important driver of galaxy evolution, and affecting the galaxy-halo connection, but also the biases and systematic uncertainties for further cosmological analysis. With the abundance of large multi-wavelength surveys, the application of machine learning techniques (reconstruction of galaxy spectra with unsupervised learning, specifically autoencoders) could provide the solution to a more complete AGN identification technique. This provides a new method to produce accurate and more complete AGN selections in wide-field surveys.

**Orateur:** SRINIVAS, Dhavala Sai (University of Portsmouth)

**Classification de Session:** COLOURS Workshop