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Characterizing Euclid galaxies using machine-learning approach

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A complete and satisfactory understanding of the processes that led to the formation and evolution of the variety of today's galaxy types is still beyond our reach. To solve this problem, we need both large datasets reaching high redshifts and novel methodologies for dealing with them. The recent cutting-edge Dark Energy Spectroscopic Instrument (DESI) has already provided ~20 million spectroscopic redshifts, more than the combination of any other previous study, covering a large redshift range. By harnessing the power of unsupervised machine-learning algorithms, we automate and enhance the process of categorizing galaxies transcending the limitations of standardly used classifications complemented by the analysis of their physical properties. I will present how this knowledge can be transferred for Euclid, with a particular interest in unrevealing obscured and faint AGN in low-mass galaxies. I will also discuss the synergies of DESI and Euclid data to enhance understanding of galaxies & AGN evolution.

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