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# Spatially resolved excitation diagnostic diagrams at kpc scales

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## Abstract

Diagnostic diagrams based on line ratios of optical emission lines (e.g. the classical BPT diagram) have long been used a key tool in galaxy evolution studies to distinguish star-forming galaxies from active galactic nuclei. Large integral field spectroscopy surveys of the nearby Universe (e.g. CALIFA, MaNGA, SAMI) have recently allowed detailed statistical studies of the BPT diagram on kpc scales, uncovering the role of shocks, diffuse ionised gas and ionisation from old hot stars. In this talk I will summarise the lessons learnt from studying galaxies and their BPT diagrams at kpc scales, and highlight some of the current challenges in using diagnostic diagrams to probe the physics of galaxies.

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