Observing the fuelling and growth of supermassive black holes

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Abstract

From an astrophysical point of view, the fuelling and growth of supermassive black holes is constrained by observations of the material in the immediate vicinity of the black hole. This material is part of the host galaxy and controls the amount of gas that is available for the black hole to accrete. This same material is also the fuel used to power the active phases of black holes, that manifest as Active Galactic Nuclei (AGN/Quasars). In this presentation I will summarise the current methods we have of constraining black hole evolution properties from astrophysical observations. I will then discuss our new results, where we showed for the first time evidence of black hole fuelling by inter-galactic gas. I will show how interactions between galaxies can provide the necessary material to activate the gas accretion onto supermassive black holes and discuss their impact on black hole evolution.

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