

Catching supermassive black holes with Rubin-LSST: Towards novel insights and discoveries into AGN science

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Changing-state AGN with LSST

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AGN are known to show flux variability over all observable timescales and across the entire electromagnetic spectrum. Over the past decade, a growing number of sources have been observed to show dramatic flux and spectral changes, both in the X-rays and in the optical/UV. Such events, commonly described as “changing-look AGN”, can be divided into two well-defined classes. Changing-obscuration objects show strong variability of the line-of-sight column density, mostly associated with clouds or outflows eclipsing the central engine of the AGN. Changing-state AGN are instead objects in which the optical/UV continuum emission and broad emission lines appear or disappear, and are typically triggered by strong changes in the accretion rate of the supermassive black hole. In my talk I will review our current understanding of Changing-state AGN, and then focus on future developments with LSST, particularly in combination with new-generation optical spectroscopic surveys (e.g. 4MOST).

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Primary author: Prof. RICCI, Claudio (Universidad Diego Portales)

Presenter: Prof. RICCI, Claudio (Universidad Diego Portales)

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