

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

Contribution ID: 27

Type: **not specified**

Blazars in the early Universe

Wednesday, 24 July 2024 14:55 (20 minutes)

High-redshift jetted (or radio-loud) QSOs offer invaluable insights into the early epochs of the Universe. Understanding the role of relativistic jets in the SMBH formation and early accretion is of significant interest. The key question is whether SMBHs hosted in jetted QSOs have undergone distinct evolutionary paths compared to the general population. Another important issue is whether relativistic jets in the primordial Universe differ from their local counterparts. If the observed evolution can be explained by the interaction of the jet plasma with CMB photons, this could be extremely useful to probe the composition, energetics and physics of relativistic jets. Furthermore, the census of radio-loud population at different viewing angles, with different beaming factors, can shed light on the obscuration levels and the geometry of the obscuring material of the high-redshift population QSOs.

In this presentation, I will show the results achieved by our group utilizing current operational facilities (RACS, CLASS, PS1, DELVE) and discuss the exciting expectations we have from the LSST survey.

Funding request, please specify

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Session Classification: Blazars