

INVITED LECTURE

Active Galactic Nuclei - signs of accretion onto a super-massive black hole

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Super-massive black holes exert their gravitational dominance at the heart of nearly all galaxies. While many remain hidden and quiet, there are some where surrounding gas feeds into them, triggering a large variety of dynamic kinematical and radiation processes in the strong-gravity regime. Through astronomical observations spanning various wavelengths, we unveil this spectacle known as Active Galactic Nuclei (AGN), ranging from radio waves to high-energy emissions. In this lecture, I will explore the observational characteristics of AGNs, starting from nearby Seyfert galaxies and extending to the most remote quasars. The main focus will be to unravel the inner workings of the AGN's central engine with the emphasis on understanding the complexities of accretion processes. Additionally, we will draw parallels between AGN accretion mechanisms and those observed in X-ray binaries hosting stellar-mass black holes, providing valuable insights into the broader understanding of cosmic phenomena.



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