

Title

**Probing SVOM/Einstein Probe Tidal Disruption Events with MeerKAT**

Abstract

Understanding black hole demographics and physical conditions in their vicinity are among the major challenges of high-energy astrophysics. Tidal disruption events (TDEs) occur when a star passes too close to a supermassive black hole and is torn apart by its immense gravitational forces. The resulting debris from the star forms an accretion disk around the black hole and possibly also associated relativistic jets, leading to a sudden and dramatic increase in electromagnetic radiation observable across various wavelengths.

Radio observations provide unique insights into the synchrotron emission from the jets, allowing us to probe their dynamics, structure, and interactions with the surrounding medium. This, in turn, helps in elucidating the fundamental processes of accretion and feedback near supermassive black holes.

This proposal is bringing together experts on radio, X-ray and optical data analysis to investigate the physical processes occurring in the vicinity of SMBHs using cutting edge datasets from MeerKAT, SVOM, Einstein Probe and FINK (for optical/IR data) in order to shed light on the too rare cases of TDEs with relativistic jets. We aim to understand the link between TDEs and quasi-periodic eruptions/oscillations observed in some AGNs and test their capability to accelerate cosmic rays and produce high-energy neutrinos.