

Stacking radio stars in MIGHTEE

Wednesday, 8 May 2024 11:15 (15 minutes)

The MIGHTEE (MeerKAT International GHz Tiered Extragalactic Exploration) survey has emerged as a groundbreaking initiative, leveraging the unprecedented capabilities of the MeerKAT radio telescope array to explore the depths of the radio sky. Even if its primary focus is on extragalactic sources, MIGHTEE can push forward the study of late-type stars through stacking techniques. .

Stars, typically associated with optical and infrared observations, have been relatively unexplored in the radio wavelength domain. MIGHTEE's unique sensitivity and high-resolution imaging provide an opportunity to revolutionize our understanding of stellar radio emission. By employing the innovative technique of stacking, we aggregate faint signals from individual stars, thereby enhancing our ability to detect and characterize the radio emission from this stellar population.

The presentation will outline the methodology behind the stacking process, highlighting the challenges and advantages associated with probing the radio properties of stars in large-scale surveys. Preliminary results from the MIGHTEE survey will be presented, showcasing the collective radio signatures of stacked stars and providing insights into the underlying physical mechanisms responsible for their radio emission.

keywords

radio stars, stacking, polarisation, survey

In-person or online?

in-person

Career level

Mid-Senior

Primary author: CAVALLARO, Francesco (INAF-OACt)

Presenter: CAVALLARO, Francesco (INAF-OACt)

Session Classification: Techniques