



Contribution ID: 70

Type: **not specified**

Vincenzo Galluzzi - A multi-frequency polarimetric study of the Radio Galaxy "Pictor A"

Monday, 12 June 2023 15:33 (1 minute)

Pictor A is one of the brightest and most extended radio sources of the Southern Hemisphere. Its distinctive FR II morphology is characterized by two hotspot complexes, each at the edge of a diffuse and roundish lobe: the Western one, i.e. the brightest, shows a more standard morphology, dominated by a compact feature preceded by a filamentary structure orthogonal to the jet direction, while the Eastern one displays a double-structure whose origin is still currently debated, despite this object has been extensively observed from 80 MHz up to 300 GeV (but not at frequencies above 10 GHz). Both regions can be easily resolved by current facilities up to X-rays, hence offering a unique opportunity to characterize and understand the physics of hotspots. Moreover, the Western hotspot arose as one of the best candidates for calibrating and validating polarimetry of high frequency (> 10 GHz) CMB observations, a necessary step for pursuing precision cosmological studies. Thus, we observed with the Australia Compact Array a 7 mm mosaic of the whole radio galaxy, providing high-fidelity polarimetric maps for hotspots and core regions (sampling spatial scales up to ~1 arcmin). We complement our study with recent lower frequency observations from SKA precursors and pathfinders, such as ASKAP and MeerKAT, as well as past GMRT archival data. At the higher frequency, instead, we concentrate on the core, exploiting nearly a decade of ALMA (Band 3,6, and 7) calibrator observations acquired on an almost regular (typically 3-7 days) basis.

Session Classification: Posters: 1-minute talks