

Source dynamics and evolution of low-luminosity FRII radio galaxies

Wednesday, 8 May 2024 15:45 (15 minutes)

I will present new VLA observations that reveal the structure of a new population of low-luminosity FRII radio galaxies discovered in LoTSS. Fanaroff and Riley (1974) identified a luminosity break between their two morphological classes. FRIs are defined to be low-luminosity, centre bright jets and the higher luminosity FRIIs have jets that are edge brightened and terminate in hotspots. Using LoTSS DR1, Mingo et al (2019) demonstrated an overlap in luminosity between FRI and FRII morphology rather than a clear divide, discovering a sub-sample of FRIIs with luminosities up to 3 magnitudes lower than the typical FR break. A population of low-luminosity FRIIs raises questions about their origins; are they older, fading FRIIs, or hosted by lower mass galaxies? Our new VLA observations of a sample of LoTSS-selected low-luminosity FRIIs allow us to make comparisons between the two FRII luminosity populations on the prevalence of hotspots, as well as morphological and spectral differences.

keywords

AGN, Galaxy Morphology

In-person or online?

online

Career level

ECR

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