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## Revisiting the Fanaroff-Riley dichotomy with the LOFAR Two-Metre Sky Survey (LoTSS)

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The relative positions of the high and low surface brightness regions of radio-loud active galaxies in the 3CR sample were found by Fanaroff and Riley to be correlated with their luminosity. We use the LOFAR Two-metre Sky Survey (LoTSS) first data release to revisit this canonical relationship. LoTSS is the deepest wide-area survey to date, with sensitivity to both compact and extended structures, allowing us to carry out the largest and most complete radio galaxy morphological analysis for 5805 sources spanning over five orders of magnitude in luminosity.

The LoTSS extended source population shows high diversity. I will discuss whether radio luminosity alone is a reliable proxy for a source appearing as edge-brightened or centre-brightened, and explore the relationship established by Ledlow and Owen where the FRI/II break depends on the optical host magnitude, which is a proxy for small-scale environment. In particular, I will also introduce a population of sources with FRII morphologies and luminosities spanning over two orders of magnitude below the FRI/II break, many of which show signs of ongoing activity.

I will highlight the complexity of the low-luminosity, extended radio source population, and the key role of the jet power/environment dependence. Ours is also a cautionary tale about interpreting the results obtained when using automated techniques to classify radio survey data.

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