Highlights of Spanish Astrophysics XII, Proceedings of the XVI Scientific Meeting of the Spanish Astronomical Society held on July 15 - 19, 2024, in Granada, Spain. M. Manteiga, F. González Galindo, A. Labiano Ortega, M. Martínez González, N. Rea, M. Romero Gómez, A. Ulla Miguel, G. Yepes, C. Rodríguez López, A. Gómez García and C. Dafonte (eds.), 2025

J-HERTz: a radio counterpart catalogue for J-PLUS

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Abstract

We present J-HERTz (J-PLUS Heritage Exploration of Radio Targets at z $<$ 5), a new value-added catalogue associated with the J-PLUS DR3 release, including sources with counterparts at low radio frequencies detected by the LOFAR LoTSS DR2 survey. The catalogue comprises about 470k objects within a common area of approximately 2100 deg^2. J-HERTz includes a machine-learning classification of the galaxies, QSOs and stars in the survey, based on Bayesian neural networks (BANNJOS, del Pino et al. 2024). Additionally, BANNJOS provides new photometric redshifts for sources without previous spectroscopic observations. The complete catalogue includes 370k galaxies, 30k QSOs and 20k stars detected with high confidence (r $<$ 20 mag). In this work we describe the main properties of these three populations, including the galaxy stellar masses derived from CIGALE fitting to the J-PLUS photospectra (Arizo et al. in prep.), the AGN luminosity and radio-loudness distribution, and the presence of stars with activity at radio frequencies. J-HERTz is publicly available through the J-PLUS DR3 online repository.

My poster in zenodo.org can be found here