# Sub-mJy radio sources SF properties : J/MNRAS/453/1079

Star formation properties of sub-mJy radio sources. (2015)
Go to the original article (10.1093/mnras/stv1675)

Keywords : surveys - galaxies: active - galaxies: starburst - galaxies: star formation - radio continuum: galaxies

Abstract: We investigate the star formation properties of ~800 sources detected in one of the deepest radio surveys at 1.4GHz. Our sample spans a wide redshift range (~0.1-4) and about four orders of magnitude in star formation rate (SFR). It includes both star-forming galaxies (SFGs) and active galactic nuclei (AGNs), further divided into radio-quiet (RQ) and radio-loud objects. We compare the SFR derived from the far-infrared luminosity, as traced by Herschel, with the SFR computed from their radio emission. We find that the radio power is a good SFR tracer not only for pure SFGs but also in the host galaxies of RQ AGNs, with no significant deviation with redshift or specific SFR. Moreover, we quantify the contribution of the starburst activity in the SFG population and the occurrence of AGNs in sources with different level of star formation. Finally, we discuss the possibility of using deep radio survey as a tool to study the cosmic star formation history.

In this work, we investigated the SF properties of the faint radio population as detected by one of the deepest 1.4 GHz survey up-to-date conducted with the VLA in the E-CDFS. This study builds upon the results presented in Bonzini et al. (2012, Cat. J/ApJS/203/15 and 2013, Cat. J/MNRAS/436/3759) where we have exploited the wealth of multiwavelength data available in this field to identify the AGNs, further divide them into RL and RQ, and characterize the properties of the radio selected galaxies (e.g. redshift, stellar mass).

See also:
- J/ApJS/203/15 : Counterparts to 1.4GHz sources in ECDF-S (Bonzini+, 2012)
- J/MNRAS/436/3759 : ECDFS sources optical/IR counterparts (Bonzini+, 2013)

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J/MNRAS/453/1079 Sub-mJy radio sources SF properties (Bonzini+, 2015)
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