MEAN SPECTRAL INDEX OF THE FAINTEST NVSS OBJECTS FROM RZF DATA

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A spectral index of a 'mean' radio source from NVSS catalog was estimated by summarizing of the drift scans of the RZF survey. In the area of RZF servey (RA2000:0-24; DEC2000:40.5-42.5) there are 28000 NVSS sources with a total flux density from 2 to 400 mJy at 1.4 GHz. These NVSS sources are considered as point ones. We have divided this flux range to 12 bins: 2–4, 4–6, 6–8, 8–10, 10–13, 13–17, 17–24, 24–35, 35–60, 60–110, 110–220, 220–400 mJy. We summarized 7500 intercepts of one-hour records at 4 GHz of RZF survey by a number of NVSS sources in each bin. Indeed we 'detected' a 'avarage' source in each bin of NVSS sample and obtained 'average' flux densities at 4 GHz for each flux bin: 0.9, 1.7, 2.6, 3.7, 4.3, 6.9, 7.6, 10.5, 17.2, 27.5, 60.0, 177 mJy respectively.

The data give a rough estimate of the 'average' spectral indices (1.4–4 GHz) for each NVSS sources bin. We found that an 'average' spectral index is a function of NVSS flux densities. A comparison with expected mean spectral indices and the reliability of such a estimate are discussed.

However, in the bin of 3–8 mJy the spectra have spectral index equal to –0.8, i.e. the relative fraction of the steep spectrum sources decreased probably because a number of FRII radio sources decreases just in this flux range (Jarvis & Rawlings, 2004).

References

Jarvis M.J., Rawlings S.: *New Astron.Rev.*, 2004, **48**, 1173.