

Flux density variability of radio sources at declinations 10° - $12^{\circ}30'$ (J2000) on time scales less than a month

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Abstract

Results of a search for and study of variability in a complete sample of flat-spectrum radio sources (83 objects) on time scales longer than a day are reported. The data were obtained in six series of daily observations on the RATAN-600 radio telescope made over 77-103 days at six frequencies from 0.97 to 21.7 GHz and at declinations of 10° - $12^{\circ}30'$ (J2000). Variability on time scales of 3-30 days with significance levels below 1% was detected for 19 sources. The time scales, modulation indices, and spectra of the variability derived from an analysis of the light curves, structure functions, and autocorrelation functions are presented for these sources. For a number of them, intrinsic variability and extrinsic variability due to scintillations in the turbulent interstellar medium have been separated. The obtained source characteristics are compared with those for sources at declinations 4° - 6° (B1950). © 2013 Pleiades Publishing, Ltd.

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