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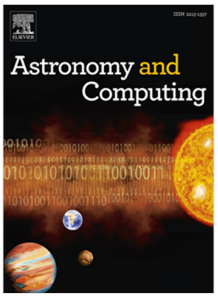

Radio variable sources at 1400 MHz and their optical variability

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Radio variable sources at 1400 MHz and their optical variability

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Abstract

In the present study we have cross-correlated NVSS and FIRST radio catalogues having radio flux measurements at the same 1.4 GHz frequency. This way we benefit from repeated observations from both catalogues, as they give more accurate positions and fluxes and more important, reveal large differences between the two measured fluxes, thus allowing to establish radio variability. As a result 79,382 radio variables have been revealed, including 6301 with flux differences at 1.4 GHz larger than 15 mJy, 1917 with flux differences > 45 mJy and 260 with flux differences > 200 mJy. By using a special technique (Mickaelian & Sinamyan 2010, Mickaelian et al. 2011) 2425 optically variable objects out of 6301 radio sources have been revealed. 2425 radio sources with both high radio and optical variability into four categories have been divided. 1206 (19%) out of 6301 radio sources have activity types from available catalogues and 619 (25.5%) out of 2425 radio sources with at the same time radio and optical variability have activity types from available catalogues. In addition, 279 radio sources out of 2425 have high variability in optical range. We have established their activity types when available. The IR fluxes and colours for the 6301 variable radio sources have been studied. Colour-colour diagrams show that most of the "unknown" sources are galaxies. The activity type for 110 (42%) out of 260 extremely high variable radio sources also have retrieved.

Keywords: surveys – catalogs – galaxies: active – BL Lacertae objects:

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