# RADIO SPECTRA OF GPS GALAXIES

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Gigahertz-peaked spectrum (GPS) sources are active galactic nuclei which are characterized by a convex radio continuum spectrum peaking at the GHz-frequencies. Their nature is still unclear, but currently the strongest scenario suggests that at least some of them are newborn radio sources in which the activity has been triggered on only 100 – 1000 years ago. There are both quasar and galaxy type GPS sources, which have a similar shape of spectrum but the nature and the physics of sources are thought to be different. Our earlier study (Torniainen et al. 2005) showed that a considerable proportion of quasar-type GPS sources are more likely misidentified flat-spectrum quasars – not GPS sources at all.

We have collected 96 GPS galaxies from the literature, observed them and collected all possible radio data for them to study how pure the galaxy type GPS samples are. Our sample includes both frequently monitored sources and sources with only a few detections. The spectra of the sample show that less than a third of our sample were definitely or highly probably GPS sources whereas less than a third did not have enough data for any solid classification. Five sources had a convex spectrum but high variability and the rest had steep or flat spectrum. These results show that the GPS galaxy samples have more genuine GPS sources than the quasar samples but yet a remarkable share of them cannot be classified as GPS sources.

Difference between the quasar and galaxy samples can partly be explained by selection effects: the quasar sample was selected from the Metsähovi monitoring sample which has been monitored over 25 years whereas the galaxy sample was gathered from the GPS literature and included both weak or rarely observed sources and more frequently monitored sources.

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**References**

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