

Pulsar glitches detected at Urumqi

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Abstract. We present an analysis of glitches detected at Urumqi from 2000 to 2008. Statistics based on all known glitches, for example post glitch behavior were investigated.

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Pulsar glitches are probably result from angular momentum transfer within the neutron star. They result in a sudden fractional increase in the rotational frequency ν of the pulsar with a magnitude in the range $10^{-10} < \Delta\nu_g/\nu < 510^{-6}$ (Wang *et al.*, 2000; Krawczyk *et al.*, 2003; Janssen & Stappers, 2006). In total, our work revealed 29 glitches in 19 young pulsars (Yuan *et al.*, 2009), including slow glitches in three pulsars and tiny glitches in eight pulsars. Post-glitch relaxation differ greatly from pulsar to pulsar, with some showing linear increase in $\dot{\nu}$ after the glitch. Analysis of the whole sample of known glitches show that fractional glitch amplitudes are correlated with characteristic age with a peak at about 10^5 years, but there is a spread of two or three orders of magnitude at all ages. Glitch activity is positively correlated with spin-down rate, again with a wide spread of values. For individual pulsars with many glitches, the time till the next glitch is generally proportional to the fractional glitch amplitude (Fig. 1).

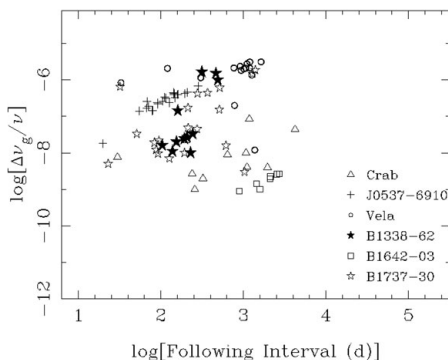


Figure 1. Fractional glitch amplitude versus length of the following interglitch interval.

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References

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