

The Effelsberg surveys of pulse shapes

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Pulse shapes of pulsars have been observed at many frequencies with the Effelsberg 100-m radiotelescope since 1972. The rationale behind these surveys was to use the great sensitivity of the 100-m telescope of the Max-Planck-Institut für Radioastronomie in particular at high radio frequencies for a complete study of pulse profiles.

The recent advent of HEMT amplifiers has improved the observational sensitivity enormously. Using these new systems it was possible to obtain integrated profiles of 183 pulsars at 1.4 GHz, 46 pulsars at 4.75 GHz and 24 pulsars at 10.6 GHz (see Seiradakis et al. 1995). Furthermore eight pulsars have been studied at 9 mm wavelengths (Kramer et al. 1996).

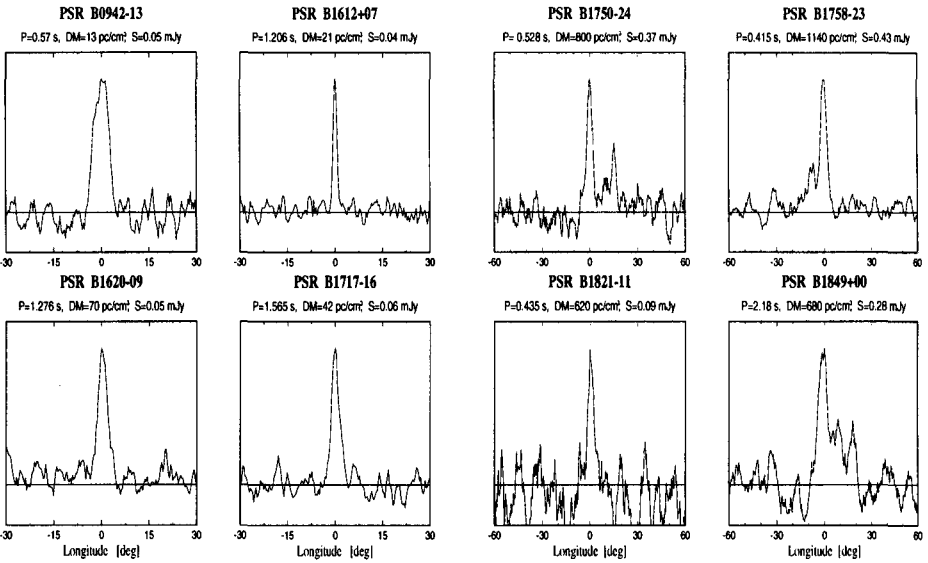
A new sensitive HEMT system at 4.85 GHz has recently been installed in the 100-m radiotelescope. The system of 500 MHz bandwidth gives $T_{sys} < 30$ K for elevations above 20° . We use two 8x60 MHz filter banks as a de-disperser for two circular polarizations. With this observing system we have detected more than 80 weaker pulsars at 4.85 GHz in some 60 hrs of observing time (Kijak et al. 1996).

We intend to go back to 1.4 GHz and complete the pulse shapes study of all objects with $S \gtrsim 1$ mJy. The 4.85 GHz survey aims at completion at the $S \sim 0.05$ mJy level. Depending on the spectral index, additional observations at 10.5 GHz are planned. Studies of pulsars at 32 GHz and 43 GHz will also be carried out with new wide-band systems at the 100-m telescope.

References

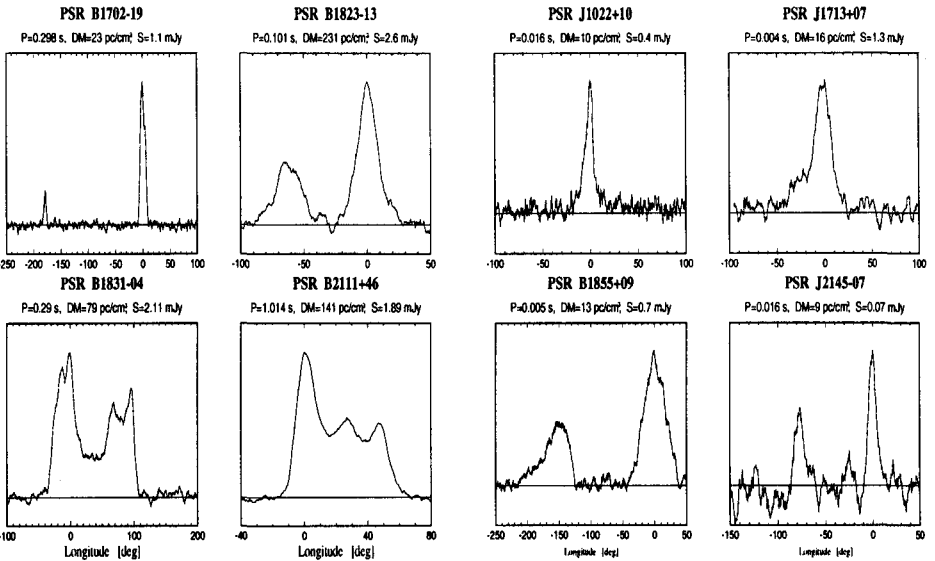
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Kramer, M. et al. 1996, *A&A*, 306, 867
Seiradakis, J.H. et al. 1995, *A&AS*, 111, 205

FIGURE 1. The new Effelsberg survey of pulsars at 6-cm wavelengths



a) The weakest pulse shapes

b) Pulsars with high dispersion measure



c) Some interesting pulse shapes

d) Millisecond pulsars