

Radio Flares in HR 1099 (V711 Tau)

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We present the results of the first three years of a single dish radio monitoring of HR 1099 we are carrying out using the the 32 m radiotelescope at the Noto VLBI station of the Istituto di Radioastronomia of the Italian Consiglio Nazionale delle Ricerche (C.N.R.).

These data, together with other observations available from literature, constitute a database which shed light on the radio emission from this system.

HR 1099 tends to undergo extended periods of strong activity, interrupted by periods of low flux density level, as can be seen from the radio behaviour on a timescale of several months. The switching between flaring and quiescent periods is not random and, at the moment, it is not possible to associate a characteristic duration to each phase.

It is therefore not possible to derive an unique “luminosity function” that can be used to predict the probability to observe the system at a certain luminosity level.

We observed several major radio flares, during which the flux density reached 600–800 mJy. There is evidence of periods during which the probability to catch these major radio event is particularly high.

The comparison between the long-term trend of the *V* magnitude of HR 1099 with its radio behaviour reveals a possible correlation ($R = 0.66$).

The mean *V* magnitude in the period 1976–1993 and of the radio emission flux density, at least at 3.6 and 6 cm, indicates that the strongest radio flares have an high probability to occur close to the average brightness minima, i.e. at the times of maximum spot coverage.

More details can be found in Umana et al. 1995, A&A (in press).