

Observing pulsars with ALMA: an unprecedented opportunity to explore the millimetre wavelength regime of pulsar emission

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The millimetre wavelength spectral window of pulsars has barely been explored, being the lack of sensitive-enough instruments one of the main reasons. However, new broad-band receivers at the IRAM 30-m, and the recently commissioned phased mode of the Atacama Large Millimeter Array (ALMA), which delivers the approximate sensitivity of an 80-m single dish, have opened an unprecedented opportunity to investigate pulsars in this unexplored frequency regime. In this talk, I will present the results from our observations of a sample of pulsars both with the 30-m and with ALMA in its phased mode. These include the integrated pulse profile of Vela obtained with ALMA at a record-high radio frequency and its polarisation properties at multiple frequency bands. In addition, we will discuss the noise properties of the ALMA dataset and comment on the capability of using the 30-m and phased-ALMA to search for new pulsars.