



Contribution ID: 34

Type: **not specified**

Multifrequency study of the energy distribution of the Crab single pulses

Thursday 8 May 2025 12:20 (10 minutes)

Giant pulses (GPs) are very energetic and impulsive phenomena, with flux densities up to few MJy and pulse widths from ~ 100 ns to ~ 100 μ s, as observed from the Crab pulsar. The GPs observed from the Crab pulsar can be used to study the energy distribution and their dynamic spectra can address the emission mechanisms of neutron stars. Some fast radio bursts (FRBs) models involve neutron stars as progenitors of such emission. In this poster, we present a multifrequency analysis of the Crab single pulses, conducted at 408 MHz with the Northern Cross telescope and between 1400 MHz and 1900 MHz with Noto and Green Bank telescopes, which aimed at characterizing their fluence and width distribution. Radio observations were simultaneous to optical observations and a future joint analysis will help shed light on the physics behind single (giant) pulses, and, potentially, behind FRBs.

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Session Classification: MWL counterparts