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G. Verna: Searching for galactic PeVatrons with CTA

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One of the major scientific objectives of the future Cherenkov Telescope Array (CTA) Observatory is the search of PeVatrons. PeVatrons are the cosmic-ray factories able to accelerate nuclei at least up to the knee feature seen in the spectrum of Cosmic-Rays measured from Earth. CTA will perform a survey of the full Galactic plane at TeV energies and beyond with unprecedented sensitivity. The determination of efficient criteria to identify PeVatron candidates during the survey observations is essential in order to trigger further dedicated observations. At CPPM we are working to determine these criteria through a study based on a full simulation. The outcome of this study is a PeVatron figure of merit, which is a metric that provides relations between spectral parameters, observation times and spectral cut-off energy lower limit.

I will give a general overview of this study with particular attention on the results obtained using the two prototype scientific tools for CTA: Ctools and GammaPy. The possibility of different observation strategies particularly suitable for PeVatron search will be also mentioned.

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Classification de Session: Students' presentations