

ASTROPHYSICS SEMINAR

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Chasing gamma-ray pulsars with Cherenkov telescopes

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Abstract. Since the beginning of the gamma-ray astronomy from ground, all groups operating Cherenkov telescopes have pursued eagerly the detection of pulsars in the very-high energy domain. Among them, the MAGIC telescope was built with the aim of achieving the lowest possible energy threshold, and since 2007 it has a threshold of 25 GeV. This made possible the first detection of the Crab pulsar above these energies. This detection has had a great impact in our understanding of pulsars, showing that pulsar spectra extends beyond that what was previously expected, up to at least hundreds of GeV. This rules out the popular scenario in which gamma-rays are produced in the close vicinity of the polar caps of neutron stars, and challenges also the outer gap model used to explain the pulsar spectra measured by the Fermi-LAT space detector.

In this seminar we start reviewing the current status of the gamma-ray astronomy from ground, explaining the observational techniques employed to detect those energetic photons. Next, we will introduce the models of gamma-ray emission in pulsars and will discuss their implications in the observations of pulsars from ground. Finally, we will come to a review the most relevant results obtained so far on pulsar searches with Cherenkov telescopes, and specially with MAGIC.

Additional Information

The seminars are given in the ISDC "Pavillon" building
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