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# Very-high-energy emission from pulsars

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## Abstract content <br>   (Max 300 words)<br><a href="http://events.saip.org.za/getFile.py/a target="_blank">Formatting &<br>Special chars</a>

It is now nearly seven years since the launch of the hugely successful Fermi Large Area Telescope (LAT) gamma-ray mission. The LAT has released two pulsar catalogues during this time, collectively describing the light curve and spectral properties of 117 gamma-ray pulsars. The vast majority of the Fermi-detected pulsars display exponentially cutoff spectra with cutoffs falling in a narrow band around a few GeV. Early spectral modelling utilized standard pulsar magnetospheres and predicted spectral cutoffs at energies of up to 50 GeV. It was therefore not expected that pulsars would be visible in the very-high-energy (VHE) regime (>100 GeV). The VERITAS announcement (confirmed by MAGIC) of detection of pulsed emission from the Crab pulsar at energies up to 400 GeV therefore raised important questions about our understanding of the electrodynamics and local environment of pulsars. H.E.S.S. has now detected pulsed emission from the Vela pulsar up to tens of GeV, making this the second pulsar detected by a ground-based Cherenkov telescope. Deep upper limits have also been obtained by VERITAS for the Geminga pulsar. We will review the latest developments in VHE pulsar science, including an overview of the latest observations, refinements and extensions to radiation models and magnetic field structures, and the implementation of new radiation mechanisms. This will assist us in understanding the VHE emission detected from the Crab pulsar, and predicting the level of VHE emission expected from other pulsars, which would be very important for the upcoming CTA.

## Apply to be<br> considered for a student <br>   award (Yes / No)?

No

## Level for award<br> (Hons, MSc, <br>   PhD, N/A)?

MSc

## Main supervisor (name and email)<br>and his / her institution

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## Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

Yes

## Please indicate whether<br>this abstract may be<br>published online<br>(Yes / No)

Yes

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