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Highlights from the H.E.S.S. telescope array: gamma-ray astronomy from 20 GeV to hundreds of TeV's

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H.E.S.S. is an array of Imaging Atmospheric Cherenkov Telescopes observing the gamma-ray sky beyond ˜20 GeV. In the course of the first 10 years of operation, this experiment significantly contributed to the field of ground-based gamma-ray astronomy. In 2012, a fifth telescope was added at the centre of the original array. This large telescope of 28 meters diameter improves the performance of the array, including a lowering of the energy threshold down to a few tens of GeV. This new phase of the experiment provides the first hybrid array of Cherenkov telescopes. In this talk, I will highlight new results obtained with the newest hybrid array and observations with the fifth, large telescope, of Galactic and Extragalactic sources, such as the Vela pulsar, the Crab nebula and a handful of important Active Galactic Nuclei. I will also present striking new findings from the accelerator of ultrarelativistic cosmic-rays located in the Galactic Centre region, the Large Magellanic Cloud, new VHE source discoveries from the upcoming H.E.S.S. Galactic Plane Survey, indirect dark matter searches, among other results from the legacy of H.E.S.S. observations.

Primary author: Dr VIANA, Aion (Max-Planck-Institut für Kernphysik (MPIK))

Presenter: Dr VIANA, Aion (Max-Planck-Institut für Kernphysik (MPIK))

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