

Upper limits on the pulsed VHE γ -ray emission from two young pulsars investigated with the high energy stereoscopic system

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ABSTRACT: The High Energy Stereoscopic System (H.E.S.S.) is a system of four, imaging, atmospheric Cherenkov telescopes in Namibia, designed to detect very-high-energy γ rays above ~ 100 GeV. During 2002–2003, H.E.S.S. collected data from two, young and energetic radio pulsars: the Crab and PSR B1706–44. We searched for pulsations at the lowest energies that H.E.S.S. is capable of detecting, aiming at a detection that would potentially differentiate between the two popular models of pulsar high-energy emission: the Polar Cap and the Outer Gap. No evidence for pulsed emission was found in the data, and upper limits were derived to a 99.95% confidence level. Our assumptions and upper limit values for the two pulsars are reported.