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Pulsations from the Vela Pulsar down to 20 GeV with H.E.S.S. II

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The Vela pulsar (PSR J0835 − 4510) is the brightest persistent source in the high-energy γ-ray sky. It is a relatively near, young and energetic rotation-powered pulsar. Vela was a key target for the High Energy Stereoscopic System phase II array (H.E.S.S. II). Observations were carried out following a hint of pulsed emission above 20 GeV observed with the *Fermi*-LAT data. In this talk we present the results of the analysis of H.E.S.S. II data obtained with the new 28 m telescope in monoscopic mode which yielded the detected of pulsed emission from the Vela pulsar at a high statistical significance level. The low-energy performance of the H.E.S.S. II instrument in monoscopic mode is clearly demonstrated given a distinct pulsed excess down to energies of 20 GeV. The H.E.S.S. II data provide a thorough insight into the general phase profile of the Vela pulsar and reveal the specific pulse shape at these energies.

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References

H.E.S.S. Collaboration, 2015, in preparation.