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Enhanced HESS-II low energies performance thanks to the focus system

Tuesday, 4 August 2015 16:00 (1 hour)

For the current generation of Imaging Atmospheric Cherenkov Telescopes (IACTs), with their large mirrors and their cameras with fine segmentation of photodetectors, the focusing capability is a relevant issue. The optical system of an IACT has a limited depth of field. Therefore, focusing the telescopes close to the shower maximum in the atmosphere has a significant impact on the data acquisition and analysis. As the distance of the shower maximum to the telescope depends (among others) on the zenith angle, an adjustable focus would be desirable. The fifth Cherenkov telescope of the H.E.S.S. II array is equipped with a focus system which allows to adjust the position of the camera along the optical axis, possibly during data taking. This impact has been studied on gamma-ray Monte Carlo simulations, and the results in terms of gamma-ray trigger rate, energy reconstruction and gamma-ray effective area will be shown. The impact on mono mode analysis of the first H.E.S.S. II data will be presented as well.

Collaboration

H.E.S.S.

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