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Stereo performance of SST-1M at different altitudes

The SST-1M telescopes are a pair of Imaging Atmospheric Cherenkov Telescopes (IACTs) that have been operating at the Ondřejov Observatory (500 m a.s.l.) in the Czech Republic since 2022. Optimized for detecting gamma rays in the energy range 1-300 TeV, they are capable of performing both mono and stereo observations. Despite challenging atmospheric and geographical conditions, SST-1M has successfully detected several galactic and extragalactic gamma-ray sources with energies reaching up to 200 TeV during its ongoing commissioning.
In this study, we analyze the performance of the SST-1M telescopes at different locations to assess the impact of altitude and relative telescope spacing on their physics performance. The low-altitude site at 500 m a.s.l. has already been investigated using both Monte Carlo simulations and real data. For comparison, we selected an intermediate-altitude site at 1420 m a.s.l. corresponding to Pampa Amarilla in Argentina and a high-altitude site at 4270 m a.s.l. corresponding to Hanle in India –both of which offer favorable astronomical conditions.

Collaboration(s)

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