LST-1 telescope performance and preliminary data analysis

Swiss CTA Day, November 2020

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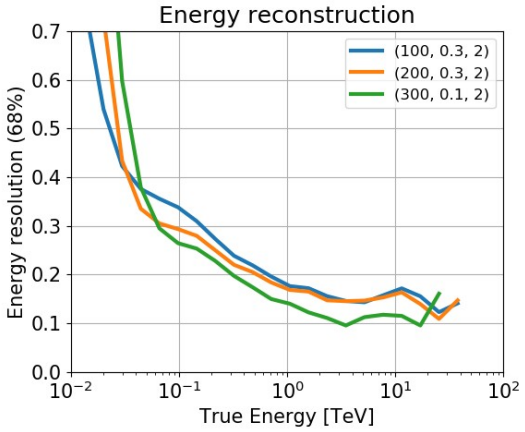
LST-1 mono performance

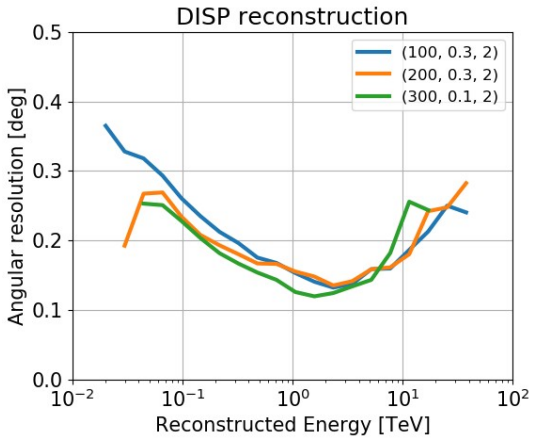
LST-1 telescope

- The biggest of the three main telescope types of CTA - mirror dish of 23 m in diameter.
- Crucial for the CTA sensitivity between 20 GeV - 200 GeV
- December 2018 first light, commissioning phase since then.

Mono performance

- Custom pipeline for shower and LC/spectra reconstruction based on Random Forest regression and classification.
- Effect of different labels, features and cuts investigated.
- E68 < 30 %, R68 < 0.30 deg





Preliminary data analysis

- First Crab observation campaign conducted in November 2019 (ON/OFF regime of observation), preliminary analysis with our pipeline.
- The energy dependent cuts on event ‘gammaness’ and the signal region radius were optimized to reach the best possible sensitivity.
- Solid Crab detection with significance 30.4σ (4.5h).
- First estimation of Crab spectrum agrees well with the results of MAGIC.