

Advanced Analysis of Night Sky Background Light for SSTCAM

Night Sky Background (NSB) is a complex phenomenon, consisting of all light detected by imaging atmospheric Cherenkov telescopes not attributable to Cherenkov light emission. Understanding the effect of NSB on cameras for the next-generation Cherenkov Telescope Array (CTA) is important, as it affects the astrophysical systematic errors on observations, the energy threshold, the thermal control of the cameras and the ability of the telescopes to operate under partial moonlight conditions. This capacity to observe under partial moonlight conditions is crucial for the CTA transient science programme, as it substantially increases the potential observing time. Using tools initially developed for H.E.S.S. (in combination with the prototype CTA analysis package ctapipe) we will present predictions for the NSB present in images taken by the CTA Small Sized Telescope Camera (SSTCAM), showing that SSTCAM will likely be able to meet the associated CTA requirements. Additionally, we calculate the potential observing time gain by operating under high NSB conditions.

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