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Divergent pointing with the Cherenkov Telescope Array for surveys and beyond

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The galactic and extragalactic surveys are two of the main proposed legacy projects of the Cherenkov Telescope Array (CTA). Considering Cherenkov telescopes field of view ($<10^\circ$), the time needed for those projects is large. The many telescopes of CTA will allow taking full advantage of new pointing modes in which telescopes point slightly offset from one another. This divergent pointing mode leads to an increase of the array field of view ($\sim 14^\circ$ or larger) with competitive performance compared to normal pointing. We present here a study of the performance of the divergent pointing for different array configurations and number of telescopes. We show that for a fixed survey sensitivity, using divergent pointing instead of normal pointing results in a non-negligible gain in observing time and reduced fluctuations in survey depth. We review multiple science cases benefiting from the large field-of-view offered by the divergent pointing.

Collaboration

CTA

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