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THE INFLUENCE OF REDUCED ATMOSPHERIC TRANSMISSION ON THE CTA-NORTH PERFORMANCE

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The Cherenkov Telescope Array (CTA) is the next generation ground-based observatory for gamma-ray astronomy at very-high energies which will consist of the northern (CTA-N, La Palma, Spain) and southern (CTA-S, Paranal, Chile) arrays. The atmosphere, as an integral part of the Cherenkov telescope detector, has a great impact on the observed data, especially in means of reduced sensitivity. One of the main contributions to the systematic uncertainties arises from the presence of clouds. To minimize these systematic uncertainties a calibration of the detector response is of great importance. For this purpose, the influence of cloud altitude and optical depth on the CTA-N performance using detailed Monte Carlo simulations has been investigated. The degradation effect of the presence of clouds is primarily observed at low and middle energies but spans across the entire energy range.

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