

# Atmospheric monitoring with the Fluorescence detector Array of Single-pixel Telescopes

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The Fluorescence detector Array of Single-pixel Telescopes (FAST) is a proposed low-cost, large-area, next-generation experiment for the detection of ultrahigh-energy cosmic rays (UHECRs) via the atmospheric fluorescence technique. Two FAST telescopes are installed and operating at the Black Rock Mesa site of the Telescope Array Experiment in Utah, USA. Knowledge of the properties of the atmosphere above the detector is of utmost importance for the analysis and reconstruction of the energy and trajectory of UHECRs measured with an atmospheric fluorescence telescope. The FAST experiment uses all sky camera (FASTCam) and sky quality monitor (SQM) for the detection of clouds and quantification of the night-sky background light in the field-of-view of the telescopes. Measurements of a vertically-fired ultra-violet laser at a distance of 21 km from the FAST telescopes are used to infer the transparency of the atmosphere above the detector via comparison with simulations.

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