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Atmospheric monitor for Telescope Array experiment

Atmospheric monitoring is very important for the observation of air showers by the air fluorescence technique.

In the Telescope Array (TA) experiment, the LIDAR (Light Detection And Ranging) system and the CLF (Central Laser Facility) system are used for the measurement of atmospheric transparency. The LIDAR system is located southeast of TA site, and the CLF is located in the center of the TA site. The usefulness of the CLF and LIDAR systems are demonstrated by analyzing the time variation of atmospheric transparency with the systems. The two atmospheric monitor systems are complementary. We have installed a new LIDAR system at the CLF location, and we believe this will yield valuable data.

Clouds are observed with a CCD camera, an IR camera and by visual checks. In addition, we have also measured atmospheric parameters at the ground level using several weather systems. In the talk, these detector systems will be described.

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