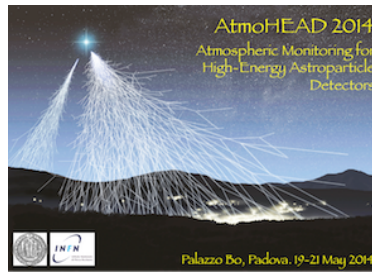


AtmoHEAD 2014: Atmospheric Monitoring for High Energy AstroParticle Detectors



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Atmospheric Monitoring in the Pierre Auger Observatory

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The Pierre Auger Observatory detects high-energy cosmic rays with energies above some 10^{17} eV. It is built as a multi-hybrid detector measuring extensive air showers with different techniques.

For the reconstruction of extensive air showers, the atmospheric conditions at the site of the observatory have to be known quite well. This is particularly true for reconstructions based on data obtained by the fluorescence technique. For these data, not only the weather conditions near ground are relevant, most important are altitude-dependent atmospheric profiles. Thus, the Pierre Auger Observatory has set up a dedicated atmospheric monitoring programme at the site of the observatory in the province Mendoza, Argentina.

Most atmospheric monitoring activities aim primarily for a high-quality reconstruction of air showers. Further interests are beyond the scope of cosmic ray investigations, in the field of atmospheric science. Local measurements can be used for determining the accuracy of global model data at the site of the Observatory or can serve for dedicated studies of local conditions in the Pampa Amarilla, Argentina.

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