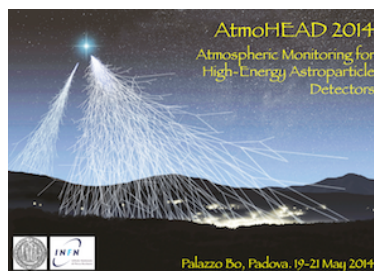


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 Atmospheric Monitoring for High Energy AstroParticle Detectors



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Remote sensing of clouds with Cherenkov telescopes

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Remote sensing of atmosphere is conventionally done via a study of extinction/scattering of light from natural (Sun, Moon) or artificial (laser) sources. Cherenkov emission from extensive air showers generated by cosmic rays provides one more natural light source distributed throughout the atmosphere. We show that Cherenkov light carries information on three-dimensional distribution of clouds and aerosols in the atmosphere and on the size distribution and scattering phase function of cloud/aerosol particles. Therefore, it could be used for the atmospheric sounding. The new atmospheric sounding method could be implemented via an adjustment of technique of imaging Cherenkov telescopes. The atmospheric sounding data collected in this way could be used both for atmospheric science and for the improvement of the quality of astronomical gamma-ray observations.

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