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## **About the possibility for estimation of the atmospheric transparency on the basis of EAS Cherenkov light registration**

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### **Abstract content**

The transparency is one of the primary measures of the atmospheric state. The precise long term series of atmospheric transparency measurements gives the possibility for quantitative estimate of the variability of air circulation and to make climatologic conclusions with regard to contamination, cloud formation, humidity and radiative exchange. It seems to be possible to estimate the atmospheric transparency on the basis of atmospheric Cherenkov light registration and corresponding Monte Carlo simulations. Measuring the Cherenkov light flux produced in extensive air shower in different atmospheric conditions one obtains different amplitude spectra. This reflects on the slope of the reconstructed spectrum. The different slopes of the reconstructed spectra correspond obviously to different atmospheric conditions. In this work are presented several CORSIKA simulations of the expected density spectra at sea level and high mountain altitude observation levels. Several preliminary measurements with atmospheric Cherenkov telescope and estimates are shown. The possibility to study different atmospheric profiles is discussed.

**If this papers is presented for a collaboration, please specify the collaboration**

### **Summary**

### **Reference**

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 845-848

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