

## From the Geosphere to the Cosmos: ASPERA Workshop

### Abstract

#### [CTA, associated sciences and energy considerations](#)

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#### **Abstract:**

In this talk I introduce the Cherenkov Telescope Array (CTA) project and will discuss in detail the work of the Atmospheric Monitoring and Calibration Working Group (ATAC) of the CTA project which incorporates both astroparticle and atmospheric physicists. I will address the detailed atmospheric simulations undertaken by the working group, which utilize a database of existing Radiosonde and Lidar data to model the performance of candidate telescope arrays under differing atmospheric conditions utilizing Monte Carlo simulations of the atmosphere, the development of the extensive air showers and the telescope optics and electronics. This discussion will highlight the need for precise measurements of the atmospheric transmission profile, and leads directly to the significant ongoing efforts in the development of Raman Lidars for CTA. I will highlight this work, and the constraints the operation of the telescope array puts upon the use of such systems.

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