



## **Aerosol optical thickness measurements at the High Altitude Research Station Jungfraujoch, Switzerland**

**W. H. Knap** (1), S. Nyeki (2), A. Los (3) and P. Stammes (1)

(1) Royal Netherlands Meteorological Institute (knap@knmi.nl), (2) MeteoSwiss, Payerne, Switzerland, (3) Kipp & Zonen, Delft, the Netherlands

This presentation deals with the intercomparison of the Aerosol Optical Thickness (AOT) derived from three different sunphotometers using three different algorithms for the retrieval of AOT from direct solar irradiance measurements. The measurements were performed at the High Altitude Research Station Jungfraujoch, Switzerland (3580 m a.s.l.) during the period August-November 2003. The instruments used were the SPUV (YES, Inc) operated by KNMI, the POM-01L (PREDE Co., Ltd) operated by Kipp & Zonen, and the Precision Filter Radiometers (PFR) operated by MeteoSwiss. The SPUV and POM-01L were guest instruments whereas the PFRs are operational at Jungfraujoch on routine basis within the Swiss Atmospheric Radiation Monitoring Network (CHARM). Mean AOT values for the observational period are 0.036 (368 nm), 0.017 (501 nm), 0.016 (675 nm), and 0.008 (871 nm). The different instruments reveal largest differences in AOT at 368 nm ( $< 0.01$ ). For the other wavelengths differences  $< 0.005$  are found. Analysis of the differences in terms of scatter and offsets is performed by a detailed intercomparison of the algorithms used and by making cross-retrievals using different algorithms for the same data set.