

## A01-P09

### AEROSOL OPTICAL PROPERTIES OBTAINED BY SKY-RADIOMETER MEASUREMENTS AT NY-ALESUND, SVALBARD AND A CLOUD-SCREENING METHOD APPLIED FOR SKY-RADIOMETRY

Kosei Ohora (*Tokyo Gakugei University, Japan*)

Masataka Shiobara (*National Institute of Polar Research, Japan*)

Noriaki Tanaka (*University of Yamanashi, Japan*)

Hiroshi Kobayashi (*University of Yamanashi, Japan*)

m141806x@st.u-gakugei.ac.jp

The influence of the aerosol direct and indirect effects on climate in the arctic region is further extended to the global climate. Measurement of aerosol optical properties by using Sky-Radiometer (Prede Co., POM-02) has been performed continuously in Ny-Alesund, Svalbard since early 2000's. Temporal variations of the aerosol optical thickness (AOT) and the Angstrom exponent which were measured in Ny-Alesund from 2009 to 2014 are discussed in this paper. As a result, seasonal changes of AOT show a similar feature to those described in a previous study<sup>1</sup>, that is, high AOT in spring and low AOT in summer. In the present study, we have applied a new method of cloud-screening for excluding cloud contamination in the analysis, based on algorithms described in Pradeep and Takamura<sup>2</sup>, and Smirnov et al.<sup>3</sup>.

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<sup>1</sup> Aoki, K., M. Yabuki, M. Shiobara, 2010: Long-term monitoring of aerosol optical characteristics by using sky radiometer at Ny-Alesund, Svalbard (in Japanese), *Nankyoku Shiryo (Antarctic Record)*, 54-Special Issue, 882-889.

<sup>2</sup> Khatri, P., and T. Takamura, 2009: An algorithm to screen cloud-affected data for sky radiometer data analysis, *Journal of the Meteorological Society of Japan*, Vol. 87, No. 1, pp. 189--204, 2009., doi:10.2151/jmsj.87.189.

<sup>3</sup> Smirnov, A., B. N. Holben, T. F. Eck, O. Dubovik, and I. Slutsker, 2000: Cloud screening and quality control algorithm for the AERONET database, *Remote Sens. Environ.*, 73, 334--337.