

Validation of aerosol optical properties measure by sky radiometer in Mountain areas

Kazuma Aoki^{a*}, Kazuaki Kawamoto^b, Masahiro Momoi^c and Kazuhiko Miura^d

^aUniversity of Toyama, 3190 Gofuku, Toyama 930-8555, Japan

^bNagasaki University, 1-14 Bunkyo, Nagasaki 852-8521, Japan

^cGRASP SAS, 3 avenue Louis Neel, Lezennes, Nord 59260, France

^dTokyo University of Science, 1-3 Kagurazaka Shinjuku-ku, Tokyo 162-8601, Japan

*Presenting author (kazuma@sci.u-toyama.ac.jp)

We investigated the remote sensing of aerosol optical properties by using the Sky radiometer (POM-01, 02: PREDE Co. Ltd., Tokyo, Japan.: Nakajima *et al.*, 2020) in the world. Our objectives were to understand the effect on the climate change and radiative forcing. These data have revealed various some events and seasonal trend based on height difference observation of solar aureole. However, there are still some things to consider in different observation environments, effect of cloud and climatic conditions, such as changes in some parameters (surface albedo, atmospheric pressure, and so on). Based on height difference observations, we are conducting different research (Atmosphere, Ocean, Cryosphere, Land) to proposals for next validation and analysis, focusing on the wavelength dependence of optical properties by solar radiation. We provide the wavelength dependence of solar aureole, in this presentation, on the aerosol optical properties measurements with vertical variability based on height difference at three area of Toyama (Toyama and Mt. Jodo (alt. 2839m): Aoki, 2022), Shizuoka (Fuji-Taroubou and Mt. Fuji (alt. 3776m)) and Nagasaki (Nagasaki and Mt. Unzen-Nita(alt. 1100m)), Japan. In this presentation, on the aerosol optical properties measurements based on height difference with temporal and spatial variability and plan to validation satellite.

References

- [1] Nakajima, T., M. Campanelli, H. Che, V. Estellés, et al., 2020: *An overview of and issues with sky radiometer technology and SKYNET*, Atmos. Meas. Tech., 13, 4195-4218, <https://doi.org/10.5194/amt-13-4195-2020>.
- [2] Aoki K., 2022: Mountain environment science from earth global warming, Japanese Journal of Mountain Medicine, 42, 12-16, 2022.

Preferred mode of presentation: Oral