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OPTICAL PROPERTIES OF MARITIME AEROSOLS OVER THE ARCTIC OCEAN MEASURED BY SHIP-BORNE SKY RADIOMETER

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Aerosols play an important role in the Earth climate change at Arctic region. The global distributions of aerosols optical properties have been derived from earth observation satellite, and have been simulated in numerical model, which assume optical parameters. However, these distributions are difficult to derive because of variability in time and space. Especially, there are few observation data over the Arctic Ocean. We provide the information, in this presentation, on the aerosol optical properties in the ship-borne observation Arctic cruise (R/V MIRAI/JAMSTEC). Aerosol optical properties were investigated using the measurements from ship-borne sky radiometer (POM-01: Prede Co. Ltd., Tokyo, Japan). Sky radiometer is an automatic instrument has become a useful tool for aerosol observations. Observation of diffuse solar intensity interval was made every five minutes that takes only in daytime under the clear sky conditions. The aerosol optical properties were computed using the SKYRAD.pack version 4.2 developed by Nakajima et al. (1996). The obtained Aerosol optical properties (Aerosol optical thickness, Ångström exponent, Single scattering albedo, and etc.) and size distribution volume clearly showed spatial and temporal variability. In this study, we present the optical properties of maritime aerosols over the Arctic Ocean at several cruise (ex. MR12-E03, MR13-06, MR14-05).