

## Cloud optical properties from various ground and satellite instruments evaluated during an intensive campaign

\*Alessandro Damiani<sup>1</sup>, Hitoshi Irie<sup>1</sup>, Takashi Horio<sup>1</sup>, Tamio Takamura<sup>1</sup>, Rei Kudo<sup>2</sup>, Pradeep Khatri<sup>3</sup>, Hironobu Iwabuchi<sup>3</sup>, Ryosuke Masuda<sup>3</sup>, Takashi M. Nagao<sup>4</sup>

1. CERESe, Chiba University, 2. Meteorological Research Institute, Japan Meteorological Agency, 3. Graduate School of Science, Tohoku University, 4. Earth Observation Research Center, JAXA

An intensive campaign to monitor the atmospheric environment (i.e., aerosols, clouds, and gases) has been carried out at the SKYNET station of Chiba University in November 2018. The station is equipped with a broad range of meteorological instruments as well as sky radiometers and is part of various international research networks. Due to their challenging estimation from ground observations and the typical discrepancy between satellite and surface-based estimates, here we focus on cloud optical properties taking a particular interest in cloud optical depth (COD). First, we conducted a careful evaluation of four COD datasets retrieved from surface observations of i) zenith radiance recorded by a sky-radiometer (based on two independent algorithms), ii) solar radiation taken by a pyranometer and iii) spatial distribution of radiance recorded by a camera system equipped with fisheyes lens. Then, we assessed satellite-based estimations of COD retrieved from AHI/Himawari-8 and SGLI/GCOM-C observations trying to explain the differences between satellite and ground data in term of atmospheric conditions, acquisition geometry and COD spatial distribution. Preliminary results achieved from this activity will be presented.

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