

**S03-4**

**Estimation of Solar radiation using HIMAWARI-8 with analysis of renewable energy**

Hideaki Takenaka(1), T. Nakajima(1), T. Y. Nakajima(2), A. Higurashi(3), M. Hashimoto(1),  
K. Suzuki(4), T. Inoue(4), and T. Kurino(5)

*(1) JAXA, (2) Tokai univ., (3) NIES, (4) Univ. Of Tokyo, (5) JMA*

Clouds can cool the Earth by reflecting solar radiation and also can keep the Earth warm by absorbing and emitting terrestrial radiation. They are important in the energy balance at the Earth surface and the Top of the Atmosphere (TOA) and are connected complicatedly into the Earth system as well as other climate feedback processes. Thus it is important to estimate Earth's radiation budget for better understanding of the climate and environmental change. Third generation Japanese geostationary satellite HIMAWARI-8 is launched on 2014 October 07. Advanced Himawari Imager (AHI) has sixteen channels that has four visible channels, two near-infrared channels and ten thermal infrared channels. AHI will provides the detailed information of clouds and aerosols. We develop high-speed algorithm for estimate the Solar radiation using HIMAWARI-8/AHI data. It traces the high temporal resolution of satellite scan (10min wide area observation and 2.5min regional rapid scan) with quasi-realtime. Similarly renewable energy analysis (direct solar) is provided with by radiation analysis. We try to quasi-real-time monitoring of Photovoltaic power generation by Solar radiation analysis. It is new-innovative collaboration of Renewable energy and Climate study.