[EE] Evening Poster | A (Atmospheric and Hydrospheric Sciences) | A-CG Complex & General

## [A-CG36]Satellite Earth Environment Observation

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In recent years, we cannot avoid facing issues on global environmental changes that occur in various spatiotemporal scales. The earth environmental observation data by satellites became the necessary basic data to tackle and solve those issues. Due to the recent advancement in the observation sensor technique and the data processing technique, the satellite observation has been showing rapid progress, and the time is changing from examining the accuracy of the observation sensor data to the advancement of the data application, leading to broaden potential users. In these days application became synergetic, so we comprehensively pick

up this topic in the Atmospheric and Hydrospheric Sciences Session of this Union Meeting that enables to comprise the atmospheric, oceanic and land sciences; by combining the intelligence and the knowledge of the party, we propose a session that aims to prompt further studies towards the issues on earth environmental change, the advancement in the data application and future plans of Earth Observation missions.

## [ACG36-P10]Dependence on Spectral Reflectance of Surface Properties at Railroad Valley Playa for GOSAT/GOSAT-2 Vicarious Calibration

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Keywords:Green house gas, GOSAT, Railroad Valley, Vicarious calibration

GOSAT and the next generation GOSAT-2 satellites estimate the concentration of greenhouse gases, and distribution of aerosol and cloud by observing solar light reflection and radiation from surface and atmosphere of the Earth. A bidirectional reflectance distribution function (BRDF) is required for the estimation because the surface reflectance of solar light varies with the observation geometry and the surface condition. The purpose of this study is to search for an appropriate BRDF model of Railroad Valley playa, Nevada (RRV) for the sensor calibration of GOSAT. We measured the radiance factor of RRV by varying with solar incident angles and observed angles using a spectroradiometer (FieldSpec4, ASD Inc.) mounted on a one-axis goniometer. The surface sands were shifted to several sizes of grain (75, 125, 250, 500, and 1000 μm). We determined the Hapke parameters (Hapke, 2012) as the BRDF for the observed radiance factor of the sands by the least squares fitting with the free parameters of a single scattering albedo, an asymmetric factor, a shadow hiding opposition effect parameter, and a mean slope angle. This result indicates that the albedo was varied with the grain size and its physical state of the surface. Therefore, detail measurements of the surface properties at local sites, such as a filling factor, are significant to determine the precise albedo of the calibration site.