A41F-0110: **GOSAT and OCO-2 Inter-comparison on Measured Spectral Radiance and Retrieved Carbon Dioxide**

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Introduction

TANSO-FTS onboard GOSAT and the grating spectrometer on OCO-2 use different measure molecular oxygen (O2). Both instruments observe sunlight reflected from the Earth's surface in almost the same spectral range. As a first step in cross calibrating these two instruments, we compared spectral bands centered on the O2 A-band (O2A), the weak CO2 band near 1.6 microns (Weak-CO2) and 2.06 microns (Strong-CO2) bands at temporally coincident and spatially collocated points. In this work, we reconciled the different size of the footprints and evaluated at various types of the surface targets such as ocean, desert and forest. For radiometric inter-comparisons, we consider long term instrument sensitivity degradation in orbit and differences in viewing geometry and associated differences in

surface bidirectional reflectance distribution function (BRDF). Measured spectral radiances agree very well within 5% for all bands. This presentation summarizes these comparisons of GOSAT and OCO-2 spectral radiance observations and associated estimates of carbon dioxide and related parameters retrieved with the same algorithm at matchup points. We will also discuss instrument related uncertainties from various target observations



