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Prelaunch test results of TANSO-FTS and CAI on GOSAT

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In order to measure the global column concentration of carbon dioxide (CO_2) and methane (CH_4) from space, Thermal And Near infrared Sensor for carbon Observation Fourier-Transform Spectrometer (TANSO-FTS) and Cloud and Aerosol Imager have been developed and to be launched on the Green house gases Observing SATellite (GOSAT).

The TANSO-FTS has three narrow bands detectable regions; 0.76, 1.6 and 2micrion (Band1, 2 and 3) with +/-2.5cm maximum optical path difference, and a wide band (5.5 – 14.3micron) in thermal near infrared region. TANSO-CAI is a radiometer of ultraviolet (0.38 micron), visible (0.67 micron), and SWIR (0.87 and 1.6 micron) to detect and correct cloud and aerosol interference. To characterize the performance of TANSO-FTS and CAI through the environmental condition on orbit, the Signal to Noise ratio (SNR), the polarization sensitivity, Instantaneous Field of View (IFOV) and response for FTS, the instrumental line shape function (ILSF) of FTS, and also Modulation Transfer Function (MTF) of CAI have been tested by introducing collimated black body light, Ar lamp, collimated Halogen lamp light and the diffused laser light in the laboratory and the thermal vacuum chamber. The characterized performance of TANSO-FTS and CAI will be presented.