

Thermal infrared sensor calibration plan of the ground mounted on a earth Observation micro satellite

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The 50 kg class satellite that detect a radiance of forest fire of 10 um band by a micro bolometer camera at an early stage for contributing to digestive activities in is developed in the UNIFORM (University International FORMation Mission) .

Verifications with ground truth for the detection of forest fire are need not only to estimate the brightness temperature from the satellite image but also to remove the slight effect of water vapor in 10 um band.

In the present study, we have acquired a ground truth data with the ASTER TIR observation in which the image of burning of hills in Nagasaki has been taken, and the absolute radiance in the burning area has been estimated from the ground data in sub-pixel scale.

We can correct the satellite data in each pixel by using the result.

And we will prepare a procedure of verification for the UNIFORM satellite before the launch.

Keywords: Micro satellite, Earth observation, Forest fire, Thermal infrared sensor, Ground calibration, Image processing