

Contribution of SIF observed by GOSAT to estimate GPP and availability to terrestrial ecosystem model

*Tatsuya Miyauchi¹, Makoto Saito¹, Noda M Hibiki¹, Yukio Yoshida¹, Haruki Oshio¹, Akihiko Ito¹

1. National Institute for Environmental Studies

Many studies about GPP estimation and the improvement of terrestrial ecosystem model simulation using solar-induced chlorophyll fluorescence (SIF) were reported after SIF was known that it was obtained from GOSAT's spectrum data. GOSAT-2 is planned launching in 2018 and the improvement of terrestrial ecosystem model for reliability of L4 product (global GHG flux and distribution) using SIF is required. In this presentation, we will report about SIF by GOSAT, comparison of SIF and observed GPP, and contribution of SIF to estimate GPP by machine learning (random forest regression) as preparation for GOSAT-2. Moreover, we will report about the removal method of random noise on SIF observed by GOSAT and the problems on the usage of SIF to models.

Keywords: Solar-induced chlorophyll fluorescence, terrestrial ecosystem model, GOSAT, random forest regression, GPP, carbon cycle