Estimation of global solar-induced chlorophyll fluorescence (SIF) by terrestrial ecosystem model VISIT and comparison with SIF observed by GOSAT

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Many studies for GPP model estimation improved by using solar-induced chlorophyll fluorescence (SIF) were reported after SIF was available from GOSAT's spectrum data. GOSAT-2 was launched in 2018 and SIF product is planted to provide. In this study we implemented the biochemical process for calculating SIF to terrestrial ecosystem model VISIT. Moreover, we estimated SIF for observation direction of GOSAT using a radiation transfer model for atmosphere-canopy. In our presentation, we will report details of model implementation and the method for converting the SIF calculated VISIT to the SIF of satellite-observed direction. We will show the comparison of SIF by VISIT and GOSAT.

Keywords: Solar-induced chlorophyll fluorescence, Terrestrial ecosystem model, GOSAT, GPP, Carbon cycle

