Algorithm improvement for GCOM-C/SGLI Above Ground Biomass Standard product.

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On 23rd Dec., 2017, Japan Aerospace Exploration Agency (JAXA) has launched new Earth observation satellite GCOM-C . GCOM-C equips Second-generation Global Land Imager (SGLI) as core sensor. Since SGLI can observe nadir and off-nadir angle with along-track direction simultaneously, it is expected to retrieve forest Above Ground Biomass (AGB) using bi-directional spectral data.

For the estimation of forest AGB, difference of bi-directional reflectance of each observation angle caused by forest canopy structure will be key information.

Authors have been developed basic AGB estimation algorithm for SGLI AGB standard product. This algorithm is based on the empirical model related to the relationship between reflectance shift on the Red-NIR plane for different viewing angle and AGB. The algorithm requires optimum approximation coefficients directly related AGB amount in observed area for each forest type. In 1st stage product algorithm, we have decided these coefficients using AGB in-situ dataset collected from literature survey which work has been conducted by JAMSTEC. While the AGB estimation results using SGLI reflectance data achieved success criteria for initial stage, it is required for getting better accuracy to achieve the full success criteria.

In this paper, development of algorithm for aimed at improving accuracy was discussed. The improved algorithm which adopting the rasterized AGB existed data base and change the zoning method, has been tested. The result of the trial, the accuracy of estimation has been confirmed.

キーワード：Second Generation Global Imager (SGLI)、Multi-angular observation、Forest canopy、Biomass Estimation
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