



Novel Interpretations of Solar-Induced Chlorophyll Fluorescence and Photochemical Reflectance Using Remote Sensing

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Message from the Guest Editors

Solar-induced chlorophyll fluorescence (SIF) and photochemical reflectance indices (PRIs) provide opportunities to investigate vegetation dynamics under different environmental conditions. Recent advances in remote sensing techniques have enabled measurements of SIF and PRIs from leaf, canopy, and landscape scales. However, these measurements have been transformed into valuable information, though new applications still require more effort dedicated to the scaling, modelling, and interpretation of SIF and PRIs. Instrumental, atmospheric, structural, and physiological factors are accounted for to establish a quantitative link between SIF, PRIs, and photosynthesis.

Potential topics include, but are not limited to, the following:

- Instrumentations and measurement protocols;
- Retrieval algorithms and calibration/validation methods;
- Vegetation stress detection;
- SIF and PRI modelling, as well as radiative transfer models;
- New applications of SIF and PRIs;
- Vegetation dynamics monitoring;
- Gross primary production estimation;
- Scaling from leaf to canopy;
- Relationships among SIF, PRIs, and photosynthesis.





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