remote sensing

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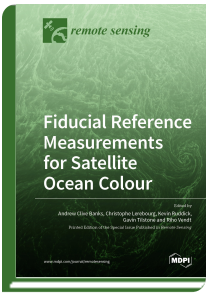
Special Issue Reprint

Fiducial Reference Measurements for Satellite Ocean Colour



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Ocean color measured by satellite-mounted optical sensors is an essential climate variable that is routinely used as a central element for assessing the health and productivity of marine ecosystems and the role of oceans in the global carbon cycle. For satellite ocean color to be reliable and used in these and other important environmental applications, the data must be trustworthy and high quality. Pre-flight and on-board calibration of satellite ocean color sensors is conducted; however, once in orbit, the data quality can only be fully assessed via independent calibration and validation activities using surface measurements. These measurements therefore need to be at least as high quality as the satellite data, which necessitates SI traceability and a full uncertainty budget. This is the basis for fiducial reference measurements (FRMs) and the FRM4SOC project, which was an European Space Agency (ESA) initiative to establish and maintain SI-traceable ground-based FRM for satellite ocean color, thus providing a fundamental contribution to the European system for monitoring the Earth (Copernicus). This Special Issue of MDPI Remote Sensing is designed to showcase this essential Earth observation work through the publication of the project's main achievements and results accompanied by other select relevant articles.

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