



remote sensing



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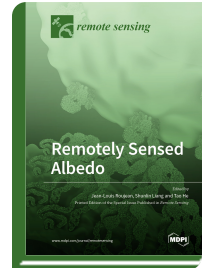
Remotely Sensed Albedo

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Albedo is a known and documented phenomenon, defined as the reflectivity of a surface, i.e., the ratio of reflected light energy to incident light energy. It is a dimensionless quantity, used in particular in agro-forestry, urban environment, cryosphere and geology. It is an Essential Climate Variable (ECV), deemed extremely meaningful to compute the earth heat balance. The albedo of natural surfaces varies largely, especially in the visible, with the lowest values found for water bodies and dense vegetation canopies and the highest values for desert and snow. It also changes with the angular distribution and spectral composition of the incident radiation and with the surface moisture. Satellite observations allow consistent measuring of the surface albedo at continental scale over a short period of time. Long-term series of surface albedo are good indicators of climate change, especially over glaciers and polar caps. On the other hand, the albedo of bare soil provides a good diagnostic of their degradation. The reliability of satellite albedo is verified against ground-based radiometers and UAV, which also serves to calibrate the instruments embarked on space-borne observing systems and check the quality of the atmospheric correction.



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