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Terrestrial albedo models: Comparing results from CMSAF EO data and a GCM.

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The fluxes of incoming and outgoing terrestrial radiation must, in equilibrium, be consistent with the properties of the Earth system that influence albedo - e.g. surface albedo, cloud presence, cloud type and so on. We can test this consistency by building simple models of albedo on the basis of the in- and out-going shortwave fluxes as well as system properties. We do this using observations-based data from the CMSAF project on the one hand, and data from a coupled global climate model on the other. Results from three years of CMSAF data are given, along with several similar-length samples from GCM output. We find that the method is useful for detecting EO-based data-quality issues. Strengths and limitations of the approach are discussed.