



Operational retrieval of land surface parameters from MODIS and MISR albedo products.

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We present and evaluate results from the application of an inversion method conducted using both MODIS and MISR derived broadband visible and near-infrared surface albedo products available during a full seasonal cycle over a large European window. A validation of this inversion technique has been done on the basis of FLUXNET in situ data.

Our application is based on optimal control theory and makes use of automatic differentiation technique (AD). It addresses complex geophysical scenarios involving snow occurrence in mid and high-latitude evergreen and deciduous forest canopy systems. The occurrence of snow during the winter and spring seasons is based on the analysis of the MODIS snow products which assimilation by our package translates into an adaptation of the prior values, both the maximum likelihood and width of the 2-D probability density functions (PDF), characterizing the background conditions of the forest floor.

Our results illustrate the capability of the inversion package to retrieve the vegetation parameters (such as the effective LAI and the albedo of the vegetation background) as well as to assess a meaningful partitioning of the solar fluxes between the soil, vegetation and atmosphere layers, along the year in an operational way, for both sensors and for large geographical regions.