Validation of the Operational MERIS FAPAR Products

Abstract:
This contribution discusses the validation of the operational Medium Resolution Imaging Spectrometer (MERIS) Level 2 land product which corresponds to the biophysical variable of the Fraction of Absorbed Photosynthetically Active Radiation (FAPAR). The FAPAR value acts as an indicator of the presence and state of the vegetation and it can be estimated from MERIS data at both reduce and full resolution using a physically-based approach. The quality of the MERIS FAPAR products, derived from the MERIS Global Vegetation Index (MGVI) algorithm, capitalizes on the availability of three years of MERIS data over the full globe. The validation exercises proposed here assess the accuracy and the quality of the MGVI product by 1) analyzing the estimates of theoretical FAPAR uncertainties (versus the algorithm formulae and instrument calibration performance), 2) comparing MGVI values to similar products generated by other independent sensors like the Sea-viewing Wide Field-of-view Sensor (SeaWiFS) and the MODerate Resolution Imaging Spectro-radiometer (MODIS) with either co-located and quasi simultaneously acquired data or over the same regional area with temporally composited products, and finally 3) comparing these remote sensing products against ground-estimates of FAPAR which have been performed over specific land cover types during one seasonal cycle.

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