How to optimally use remote sensing data in Dynamic Global Vegetation Models?

Held 23-25 May 2011, ESA ESRIN, Frascati, Italy
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The Earth System modeling community started recently to include terrestrial biospheric dynamics on an equal level with atmosphere and ocean dynamics into their models. At the same time, the remote sensing community is improving the monitoring of ecosystem conditions and trends with very high spatial and temporal resolution. In this particular workshop, we aimed to explore the feasibility of making use of Remote Sensing products within Earth System Models (ESMs), applying different methodologies. Specifically, we aimed to discuss open scientific issues behind this topic, focussing on vegetation properties within ESMs. After an overview on the number of vegetation properties that might be represented by remote sensing products and the uncertainties in different products and its representation in ESMs, most discussion concentrated on radiative properties and the representation of vegetation cover. Both properties are dealt with differently in each community. The testing of radiative transfer schemes (a stronghold in the remote sensing community) and its impacts on estimates of radiative properties and subsequently estimated productivity could therefore be an interesting case study. Such case study would allow evaluating to which extent better radiative modelling is essential to ESMs and the extent to which remote sensing products could be useful in that respect (and ideally fully integrated). Ways to formulate and execute such case study are under consideration and development.

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