



## **EAGLE 2006 – Multi-purpose, multi-angle and multi-sensor in-situ and airborne campaigns over grassland and forest**

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EAGLE2006 - an intensive field campaign - was carried out in the Netherlands from the 8<sup>th</sup> until the 18<sup>th</sup> of June 2006. Several airborne sensors - an optical imaging sensor, an imaging microwave radiometer, and a flux airplane - were used and extensive ground measurements were conducted over one grassland (Cabauw) site and two forest sites (Loobos & Speulderbos) in the central part of the Netherlands, in addition to the acquisition of multi-angle and multi-sensor satellite data. The data set is both unique and urgently needed for the development and validation of models and inversion algorithms for quantitative surface parameter estimation and process studies. EAGLE2006 was led by the Department of Water Resources of the International Institute for Geo-Information Science and Earth Observation and originated from the combination of a number of initiatives coming under different funding. The objectives of the EAGLE2006 campaign were closely related to the objectives of other ESA Campaigns (SPARC2004, Sen2Flex2005 and especially AGRISAR2006). However, one important objective of the campaign is to build up a data base for the investigation and validation of the retrieval of bio-geophysical parameters, obtained at different radar frequencies (X-, C- and L-Band) and at hyperspectral optical and thermal bands acquired over vegetated fields (forest and grassland). As such, all activities were related to algorithm development for future satellite missions such as Sentinels and for satellite validations for MERIS, MODIS as well as AATSR and ASTER thermal data

validation, with activities also related to the ASAR sensor on board ESA's Envisat platform and those on EPS/MetOp and SMOS. Most of the activities in the campaign are highly relevant for the EU GEMS EAGLE project, but also issues related to retrieval of biophysical parameters from MERIS and MODIS as well as AATSR and ASTER data were of particular relevance to the NWO-SRON EcoRTM project, while scaling issues and complementary between these (covering only local sites) and global sensors such as MERIS/SEVIRI, EPS/MetOP and SMOS were also key elements for the SMOS cal/val project and the ESA-MOST DRAGON programme. This contribution describes the mission objectives and provides an overview of the airborne and field campaigns.