

# TRAINING COURSE

## Spectrometry of a Wetland And Modelling of Photosynthesis with Hyperspectral Airborne Reflectance and Fluorescence

# SWAMP



Obrzycko-Rzeczyn, Poland, 6 - 16 July 2015



Poznań University of Life Sciences

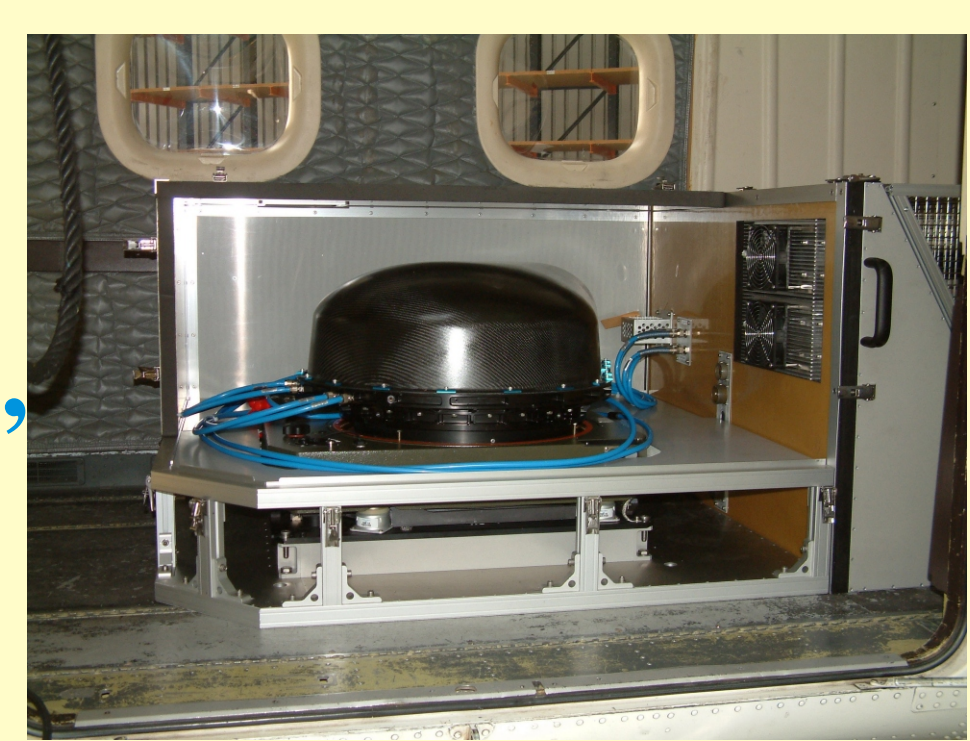
Hosted by the Poznan University of Life Sciences and co-funded by the FP7 European Facility for Airborne Research (EUFAR), COST Action OPTIMISE and European Space Agency (ESA)

The main aim of this training course is to teach early stage researchers (PhD students and post-docs) and a limited number of university lecturers how to plan and conduct an airborne research and (near-)ground validation campaign and how to use the collected data. The training course includes an airborne campaign with the APEX imaging spectroradiometer mounted in the DLR Dornier DO228 aircraft combined with a concurrent ground campaign and near-ground campaign with small UAV platforms and satellite data acquisitions at the instrumented POLWET wetland study site. All these platforms and sensors are used to determine Earth surface reflectance and fluorescence, which play a role in supporting satellite mission design and use (e.g. FLEX) and which support multi-scale ("leaf to ecosystem") land-atmosphere exchange modelling studies. Through this training the students gain a better understanding of the complexities and uncertainties in optical Earth observations from near-ground, airborne and satellite platforms. This in turn grant all participants insight into the potential and limitations of current and future satellite Earth observations and enable them to generate a greater scientific impact through their future campaigns.

Through the training course, participants will learn how to:

- > develop a measurement strategy and design a flight plan for an airborne campaign;
- > develop a sampling strategy and carry out (near-)ground measurements to support an airborne campaign & measurements from small UAV platforms;
- > recognise what laboratory and field calibration, and validation measurements are necessary to support airborne and near-ground optical remote sensing;
- > post process airborne and near-ground optical measurements;
- > analyse these data through statistical methods and how to integrate them into radiative transfer models.

APEX instrument operated by VITO & UZH (right), DLR's Dornier Do228 (below)



### Scientific Committee

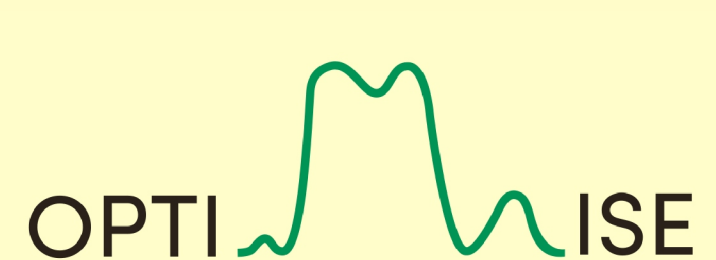
R. Juszczak (SWAMP PI, PULS, PL)  
A. MacArthur (OPTIMISE Chair, UEDIN, UK)  
E. Tomelleri (EURAC, IT)  
I. Reusen (EUFAR ET coordin., VITO, BE)

### Organizing Committee

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EUFAR integrates operators of instrumented aircraft and remote-sensing instruments, and experts in airborne measurements in the field of environmental in the atmospheric, marine, terrestrial and Earth Sciences [www.eufar.net](http://www.eufar.net)



The COST Action OPTIMISE (Innovative Optical Tools for Proximal Sensing of eco-physiological processes) brings together scientists working in the 3 areas: Spectral Information System, UAVs Hyper-Spectroscopy, and Reflectance & Fluorescence. <http://optimise.dcs.aber.ac.uk/>

# TRAINERS



# TRAINEES

