



The Universal Radiation Measurement System (URMS) and the Airborne Multi-Spectral Sunphoto- & Polarimeter (AMSSP)

T. Ruhtz, R. Preusker, A. Hollstein, and J. v. Bismarck

Inst. for Space Sciences, FU Berlin, Berlin, Germany (ruhtz@zedat.fu-berlin.de)

URMS will provide an airborne instrument environment inside and in front of a Wing-Pod with multi-directional capabilities of radiation measurements within a broad spectral range from the visible to the near infrared. The optical entrance head consists of a double mirror system with a maximum field of view of 10° and a diameter of 100mm. The radiation coming from the upper or lower hemisphere can be directed into a temperature controlled Optical Instrument Container (OIC) inside of an aircraft wing pod. The mechanical interface of URMS will be compatible to the HALO basis Wing-pod and the EUFAR (European Fleet for airborne Research) reference Wing-Pod design and thus it can be certified for a number of different aircraft. The scientific instrumentation is positioned inside a container at the center of the redirected beam of light.

A state-of-the-art Sunphoto- and Polarimeter was proposed as the first instrument example for URMS. The development model of AMSSP (AMSSP-EM) is currently operating as a non imaging Full-Stokes Polarimeter in the visible spectral range. A Sunphotometer will be added on a later stage of the project and is currently under development. These ongoing developments in combination with enhanced radiative transfer models and sensitivity studies will support future airborne campaigns to improve complex multi-directional measurement strategies in the field of remote sensing methods of optical properties of the atmosphere or water and surface applications.

We will present instrument details and measurements taken with AMSSP-EM during the international airborne campaigns EUCAARI/Impact and Vocals-Rex.