A001. Advanced remote sensing techniques and innovative retrieval approaches for characterization of aerosol and cloud properties

Kirk Knobelspiesse NASA Ames Research Center, Moffett Field, CA, 94043

Jens Redemann NASA Ames Research Center, Moffett Field, CA, 94043

Airborne polarimeter intercomparison for the NASA Aerosols-Clouds-Ecosystems (ACE) mission

The Aerosols-Clouds-Ecosystems (ACE) mission, recommended by the National Research Council's Decadal Survey, calls for a multi-angle, multi-spectral polarimeter devoted to observations of atmospheric aerosols and clouds. In preparation for ACE, NASA funds the deployment of airborne polarimeters, including the Airborne Multi-angle SpectroPolarimeter Imager (AirMSPI), the Passive Aerosol and Cloud Suite (PACS) and the Research Scanning Polarimeter (RSP). These instruments have been operated together on NASA's ER-2 high altitude aircraft as part of field campaigns such as the POlarimeter DEfinition EXperiment (PODEX) (California, early 2013) and Studies of Emissions and Atmospheric Composition, Clouds and Climate Coupling by Regional Surveys (SEAC4RS, California and Texas, summer 2013). Our role in these efforts has been to serve as an assessment team performing level 1 (calibrated radiance, polarization) and level 2 (retrieved geophysical parameter) instrument intercomparisons, and to promote unified and generalized calibration, uncertainty assessment and retrieval techniques. We will present our progress in this endeavor thus far and describe upcoming research in 2015.