Cloud property retrievals from POLDER onboard the PARASOL platform

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The last POLDER (Polarization and Directionality of the Earth's Reflectances) instrument was launched on the PARASOL microsatellite developed by the French space agency (CNES) in December 2004. POLDER is designed in partnership with the CNRS-USTL Laboratoire d'Optique Atmosphérique (LOA). PARASOL is an expected two-year mission, flying in formation with Aqua and Aura (NASA), Calipso (NASA/CNES) and CloudSat (NASA/CSA) as part of the so-called A-Train. These satellites, to be joined later by NASA's Orbiting Carbon Observatory (OCO) in 2008, will combine, for the first time ever, a full suite of instruments for observing clouds and aerosols from passive radiometers to active lidar and radar sounders.

POLDER is mainly dedicated to improve our knowledge of cloud and aerosol properties by measuring the directionality and polarization of sunlight reflected by the Earth-atmosphere system. The original measurement capabilities of POLDER (polarization, multi-viewing, multi-spectral) have been used to develop an inversion scheme for cloud property retrieval (cloud amount, cloud pressure, cloud optical thickness, cloud thermodynamic phase, cloud albedo). The so-called "Earth Radiation Budget (ERB) and Clouds" processing line is implemented at the French ICARE (Interactions Clouds Aerosols Radiations Etc) Center and the first months of POLDER data and "ERB & Clouds" operational cloud products are now validating and available to the scientific community since a few months.

The aim of this presentation is to illustrate the main preliminary results of the "ERB & Clouds" processing line by comparing them to the Aqua-MODIS and MSG-SEVIRI instruments that provide an extensive dataset to validate the POLDER cloud property retrievals and, on the other hand, a good opportunity to analyze the possible synergy of those different remote sensing instruments.