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Aerosol remote sensing from the PARASOL mission and the A-train.

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Since December 2004, the CNES Parasol (Polarization and Anisotropy of Reflectances for Atmospheric Science coupled with Observations from a Lidar) mission is flying in the A-train with Aqua and Aura (NASA), further completed in April 2006 by Calipso (NASA/CNES) and CloudSat (NASA/CSA). Parasol carries a wide-field imaging radiometer/polarimeter designed to improve the knowledge of the radiative and microphysical properties of clouds and aerosols.

The advantage of measuring the directionality and polarization of light reflected by the Earth-atmosphere system will be illustrated for some key aerosol parameters. For instance, PARASOL can detect non-spherical particles within the coarse mode, which is not the case of usual sensors. PARASOL data in the blue are also sensitive to altitude and aerosol absorption; it can be combined with OMI measurements which are also affected by the same parameters and joint inversion scheme can be suggested. CALIOP can then be used for validation. Comparison between MODIS and PARASOL aerosols retrievals over the past 4 years will be presented.