

# Extended surface/atmosphere characterization using GRASP: new possibilities of classification and global aerosol sources identification

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Remote sensing is the main source of information about global state of atmosphere and surface. During the last decade a big progress has been achieved in aerosol, cloud and trace gasses characterization from space-borne remote sensing.

The recently developed Generalized Retrieval of Aerosol and Surface Properties (GRASP) approach has offered new possibilities for complete and accurate retrieval of aerosol and surface [1,2]. GRASP is based on statistically optimized inversion combined with the use of advanced forward models of aerosol and surface scattering [1,3,4].

In this presentation, using GRASP retrievals from multi-angle photopolarimetric PARASOL measurements, we discuss possibilities and challenges of aerosol/surface classification in multi-dimensional space of retrieved parameters. Using this classification we investigate correlation of aerosol types with surfaces properties both over land and ocean. It will be demonstrated how the new-found intrinsic relations between the surface and aerosol properties can be used for global aerosol sources identification and aerosol transport tracking.

## References

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Preferred mode of presentation: Oral