



ESA Activities in the Field of Active Limb Sounding in the Optical Domain

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The European Space Agency (ESA) has strongly contributed to develop a sound scientific and industrial expertise in the field of limb sounding by occultation in Europe, which also included flight instruments like GOMOS (optical visible and UV) and GRAS (L-band microwave). To further consolidate this position, it is desirable to extend the expertise to the SWIR spectral region and the usage of dedicated signal sources. ACCURATE, an innovative mission concept based on a satellite-to-satellite limb sounding geometry using SWIR lasers as signal sources, was proposed to ESA in response to a call for ideas in March 2005. ACCURATE was presented to the review process and received a positive evaluation with recommendations for further studies and research.

Following such recommendations, the observational concept was investigated further from a technological and a scientific perspective in several ESA internal and external activities. Those activities not only established a technological baseline but also advanced our scientific understanding concerning the advantages and limitations of such an observational framework.

We give an overview concerning on-going and planned activities presenting some selected results, including a preliminary system concept developed in an ESA internal study.