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The XBAER4EnMAP Project

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The eXtensible Bremen AErosol Retrieval algorithm (XBAER) was developed at the IUP. It has had success retrieving aerosol optical depth (AOD), as well as surface and cloud parameters at 10 km spatial resolution, using radiance data from the Medium Resolution Imaging Spectrometer (MERIS) on board Envisat and the Ocean Land and Colour Instrument (OLCI) on board Sentinel-3. EnMAP is a German hyperspectral satellite mission launched in 2022. The goal of the XBAER4EnMAP project is to update XBAER to use EnMAP radiances and to be able to produce output data products at the full spatial resolution of the EnMAP data, that is, at 30 m.,

The talk introduces XBAER and EnMAP. The results of a comparison between EnMAP and OLCI top-of-atmosphere reflectances (RTOA) is presented in order to determine whether EnMAP is sufficiently calibrated for the task of AOD retrieval with XBAER. Differences in OLCI and EnMAP RTOAs are investigated, in particular with respect to the bidirectional reflectance distribution function (BRDF). Lastly, initial encouraging AOD retrievals using EnMAP radiances with XBAER are presented.