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The ENVISAT Atmospheric Chemistry mission (GOMOS, MIPAS and SCIAMACHY) – Processing status and data availability

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The atmospheric chemistry instruments on board the ENVISAT platform (GOMOS, MIPAS and SCIAMACHY) provide a unique dataset of geophysical parameters (e.g.: trace gases, clouds, and aerosol) that allows a comprehensive characterization of the atmosphere's chemical and climatological processes [1]. These instruments started to provide significant science data shortly after the launch of the ENVISAT satellite (March 2002). At the time of writing this paper, these instruments and the whole payload modules are fully working and are well beyond the expected lifetime of 5 years. In addition the orbit control strategy of the platform will be modified starting from 2010, in order to extend the mission lifetime up to 2013 [2]. This means that if no instrument problems will appear, the ENVISAT atmospheric sensors will provide at the end of their life, three separated, but complementary datasets of the most important atmospheric state parameters, spanning a time interval of about 11 years. This represents an extraordinary source of information for the scientific user community, both for the completeness and quality of the data and for the extent of the dataset. The aim of this paper is to present the actual status of the ESA operational atmospheric chemistry dataset provided by the three ENVISAT atmospheric chemistry instruments and the future evolution. The processing and reprocessing status will be described in details for each instrument. The outcomes of the geophysical validation and the planned validation activities will be discussed. Finally the data availability and the source of information will be specified.

[1] H. Nett, J. Frerick, T. Paulsen, and G. Levrini, "The atmospheric instruments and their applications: GOMOS, MIPAS and SCIAMACHY", ESA Bulletin (ISSN 0376-4265), No. 106, p. 77 - 87 (2001)
[2] J. Frerick, B. Duesmann, and M. Canela, "2010 and beyond – The ENVISAT mission extension", Proc. 'Envisat Symposium 2007', Montreux, Switzerland, 23–27 April 2007 (ESA SP-636, July 2007)