



Biogeoscience review of ENVISAT atmospheric results.

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ENVISAT flies since March 2002 and the atmospheric instruments MIPAS, GOMOS and SCIAMACHY continue to feed an impressive database on the composition of the atmosphere and on its evolution, while at the beginning these instruments were purely aimed at stratospheric chemical weather, more and more results extend to the troposphere and Biogeoscience related gases. This is especially true for the SCIAMACHY instrument.

SCIAMACHY as an A.O. instrument is followed by science teams in the three participating countries: Germany with IFE at the University of Bremen and several institutions including the University of Heidelberg and MPI Mainz, in the Netherlands, KNMI and SRON lead the Dutch scientific team while in Belgium, the Belgian Institute for Space Aeronomy coordinates a Belgian science team. ENVISAT atmospheric data are also used by scientists in the six continents. The main objective of the instrument was to give a complete mapping of stratospheric ozone of which the role as a UV-B filter is essential to sustained life on the earth's surface. SCIAMACHY has also a nadir tropospheric sounding capability and follows the chemical weather of the global troposphere.

The results obtained since ENVISAT launch have shown various surprising influences of biological processes in the atmosphere including new biogenic sources of trace gases relevant to ozone chemistry in both the troposphere and stratosphere. Biogeosciences aspect are as relevant to atmospheric science as they are to surface science as important sources of methane, nitrous oxide, formaldehyde, glyoxal and other products are mainly biological. Global climatic change as well as anthropic pressure on soil use influence these gases and could lead to unexpected modifications of the atmospheric equilibrium when these enhanced emitted gases reach the upper atmosphere.