



## **Total column methane for the years 2003-2009 as seen by SCIAMACHY: Trends and variability**

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We present a long-term timeseries of SCIAMACHY data, from January 2003 through March 2009, and discuss inter-annual variability and the detection of the recent trend in methane.

In a first part, we briefly discuss the technical difficulties of retrieving a consistent methane dataset from SCIAMACHY spectra after the end of 2005. We then focus on time-series over key regions. Over the Sahara, where the best signal-to-noise for SCIAMACHY can be achieved, the increase of methane in 2007 and 2008 can be clearly observed even though it is only 10-15 ppb. In other regions, the increase can also be observed but with somewhat more noise in observed month-to-month variations.

In a second part, we will further discuss long-term averages on high spatial resolution, giving indications of regional methane source regions.

In a final part, we will briefly discuss latest 4D-VAR inversion results based on SCIAMACHY data recently published in Bergamaschi et al (JGR, 2009).