



## Global sources and sinks of methane and the use of satellite measurements

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In recent years, satellite instruments have provided a new view on the spatio-temporal variation of methane in the atmosphere. These measurements have transformed the estimation of sources and sinks using inverse modeling from a data poor into a data rich problem. In the case of SCIAMACHY the time series span up to 8 years of data by now, providing a wealth of information about a period when the global methane level changed from near stable conditions to a new phase of steady increase. To make efficient use of these measurements poses challenges to the optimization of radiative transfer and atmospheric transport models, in particular, to reduce the impact of systematic errors in the measurements and models to an acceptable level. It highlights, among several factors, the importance of independent in situ measurements. This presentation gives an overview of the measurement and modeling techniques that are used, the progress that is being made using SCIAMACHY and GOSAT, and prospects for the near future.