



## Retrievals of HCN from high-resolution FTIR solar spectra recorded at the Jungfraujoch station

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Recent investigations have resulted in the revision of the lifetime of hydrogen cyanide (HCN) from 2.5 years to 2-5 months, more in line with its important and well documented variability in the troposphere. The main HCN source is believed to be biomass burning, making this species a useful tracer of fires, e.g. the widespread and intense 2004 boreal fires. Oxidation by the OH radical is among the identified sinks, while uptake by oceans has been hypothesized as the dominant sink.

As shown by previous investigations, several lines from the  $\nu_3$  fundamental HCN band at 3  $\mu\text{m}$  can be used to retrieve information on vertical distribution of hydrogen cyanide from high-resolution FTIR solar absorption spectra. The major interfering gas in this region is water vapor. A series of typical observations recorded at the Jungfraujoch station (46.5°N, 8.0°E, 3580m asl, Swiss Alps) by the NDACC (Network for the Detection of Atmospheric Composition Change)-affiliated Bruker instrument have been fitted using various approaches to determine the optimum strategy to be used for HCN retrievals at that site, even under very wet conditions.

The selected approach is made of 7 windows encompassing 5 HCN lines. The *a priori* information (HCN vertical distribution and covariance matrix) is based on ACE-FTS measurements performed over northern midlatitudes. The HITRAN-2004 spectroscopic line parameters including the August 2006 updates for water vapor have been adopted in the retrievals performed with the OEM-SFIT-2 (v3.91) algorithm.

This contribution will give a full description of the adopted retrieval approach, including error budget and information content analysis. Tropospheric column time series of HCN from 1994 onwards will also be presented and discussed.