

## Temporal variation of the total column of ethane observed with FTIR at Tsukuba

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The total columns of C<sub>2</sub>H<sub>6</sub> have been observed with a high-resolution Fourier transform spectrometer at Tsukuba, Japan since 1999. SFIT2 spectral fitting program was used to derive the total column from 2 spectral windows in 3 micrometer region.

C<sub>2</sub>H<sub>6</sub> is the second major hydrocarbon and contribute to global warming and air pollution indirectly. The main sources are anthropogenic ones such as natural gas, biofuel, and biomass burning. But the measurements at Jungfrauoch [Franco et al., 2015] show that the emissions may be underestimated from the comparison with simulation results.

Preliminary retrieved total column of  $1.5 - 3.5 \times 10^{16}$  molecule/cm<sup>2</sup> at Tsukuba in 2012 is consistent with that of previous study [Zhao et al., 2002] at Hokkaido and is larger than the simulation result. The seasonal variation which shows maximum in spring and minimum in autumn is also consistent with those of previous studies. This is due to the increase of the destruction by the reaction with OH in summer.

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