

Recent increase and subsequent decrease of the total column of ethane observed with FTIR at Tsukuba

*Isao Murata¹, Hideaki Nakajima², Isamu Morino²

1. Graduate School of Environmental Studies, Tohoku University, 2. National Institute for Environmental Studies

The total columns of C₂H₆ have been observed with a high-resolution Fourier transform spectrometer at Tsukuba, Japan since 2001. SFIT4 spectral fitting program was used to derive the total column from 2 spectral windows in 3 micrometer region.

C₂H₆ 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.

Temporal variation of retrieved total column of C₂H₆ shows a little bit decrease (-0.4%/year) from 2001 to 2008, increase (2.2%/year) from 2009 to 2013, and again decrease (-0.6%/year) from 2014 to 2016. The last trend from 2014 may due to decrease in emission (natural gas and biofuel) related to the increase in the production of fossil fuel due to the fall of the price.

Keywords: FTIR, Greenhouse Gas, ethane