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## The vertical profiles of CH<sub>4</sub> observed at Tsukuba with a Fourier transform spectrometer

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Fourier transform spectrometer (FTS) has advantages in its high resolution and the wide wavenumber range. Vertical profiles of some species can be derived from the high-resolution spectra. The vertical profiles and column densities of CH<sub>4</sub> were retrieved from the solar spectra observed at Tsukuba, Japan with SFIT2 spectral fitting program developed by Rinsland et al. (1998). It needs to select an appropriate wavenumber region and the optimization of fitting parameters are also needed. Now we are investigating these parameters in the NDACC/IRWG group and we will reanalyze the vertical profiles and column densities of CH<sub>4</sub>. We found that the phase of seasonal variation of the mixing ratios in the lower stratosphere is shifted from those in the troposphere and the temporal variation of total column shows steplike increase in 2007 from preliminary analysis.

Keywords: FTIR, Trace Species, Methane