

Temporal variation of methane profile observed with FTIR at Tsukuba

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The vertical profiles of CH₄ have been observed with high-resolution Fourier transform spectrometer at Tsukuba, Japan since 2001. SFIT2 spectral fitting program was used to derive the vertical profiles from 3 spectral regions in 3 micrometer region.

CH₄ is the second important contributor of the anthropogenically enhanced greenhouse effect but there are many uncertainties in the source variations.

Daily averaged CH₄ total column density kept a level from 2001 to 2006, then increased from 2007 to 2008, and again kept a level from 2009 to 2014. Tropopause height shows no significant change between before and after 2007, indicating stable dynamical situation. Derived CH₄ profiles show that the increase occurred mainly in the troposphere.

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