NEW HIGH-RESOLUTION ABSORPTION CROSS-SECTION MEASUREMENTS OF HCFC-142B IN THE MID-IR

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HCFC-142b (1-chloro-1,1-difluoroethane) is a temporary substitute for ozone-depleting chlorofluorocarbons (CFCs). However, due to its high absorption cross-sections in the mid-IR, HCFC-142b is also a highly potent greenhouse gas, now detectable from space by satellite missions. So far, the accuracy of the retrieval has been limited by the lack of reference data in a range of temperatures compatible with atmospheric observations. We present new absorption cross section measurements of HCFC-142b at high-resolution (0.02 cm^{-1}) from 223 K to 283 K in the 600 cm^{-1}– 4000 cm^{-1} spectral window. The composite spectra are calculated for each temperature from a set of acquisitions at different pressures by Fourier transform spectroscopy.