THE THZ ABSORPTION OF METHYL BROMIDE (CH_3BR)

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The possibility of monitoring Methyl Bromide is of interest for both environmental and health concerns. It has an ozone depletion potential of 0.2% and falls under regulations of the Clean Air Act. Neurological effects from long term exposure may result from its major use as a pesticide. Recent improvements in microwave limb sounding at mm & submm wavelengths have resulted in retrievals of Methyl Chloride from atmospheric spectra. It is conceivable that Methyl Bromide would also be measurable by this technique. In an effort to extend and improve the previous work, the THz spectrum of Methyl Bromide has been measured at JPL. We used an isotopically enriched $^{13}CH_3Br$ (90%) sample and recorded spectra from 750 $-$ 1200 GHz. Our assignment covers the $CH_3{}^{79}Br$, $CH_3{}^{81}Br$, $^{13}CH_3{}^{79}Br$ and $^{13}CH_3{}^{81}Br$ isotopologues with $J < 66$ and $K < 17$ for the ground vibrational state. We plan to assign vibrational satellites and investigate possible perturbations near $K = 12$ in the ground state.