450. Title:Measurement of optically pumped CH3 18OH laser frequencies between 3 and 9 THz
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Abstract:The CH3 18OH isotopic form of methanol has been reinvestigated as a source of far-infrared (FIR) radiation using an optically pumped molecular laser system designed for wavelengths below 100 μm. With this system, four FIR laser emissions have been discovered, ranging in wavelength from 33.15 to 51.97 μm. The 33.15-μm line is the shortest known laser wavelength generated by optically pumped CH3 18OH. These lines are reported with their operating pressure, polarization relative to the CO2 pump laser, and their relative strength. The frequencies of these new laser emissions, along with eight previously reported lines, were measured using heterodyne techniques and are reported with fractional uncertainties up to ± ×-7. The offset frequency of the CO2 pump laser was measured with respect to its center frequency for each FIR laser emission.