

### TRANSITION DIPOLE-MOMENT OF THE $\nu(3)$ BAND OF CH<sub>3</sub>

**Abstract:** The transition dipole moment of the  $\nu(3)$  band of the methyl radical has been measured for the first time. A new discharge laser amplitude double modulation method with a difference frequency laser spectrometer and a hollow cathode discharge cell has been used. The CH<sub>3</sub> concentration has been estimated from the absorption decay when the discharge is turned off. The transition dipole moment is found to be  $\mu(\nu 3) = 0.029 \pm 0.005$  D.