INTRACAVITY LASER ABSORPTION SPECTROSCOPY OF FLAMES. HCO RADICAL DETECTION IN METHANE/AIR FLAME

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Formyl radical, HCO, was monitored for the first time in an atmospheric pressure premixed hydrocarbon flame Intracavity Laser Absorption Spectroscopy (ICLAS) based on quasi-cw argon-ion pumped dye laser was used. HCO absolute concentration profile was also measured in 30 torr flat methane/air flame. The ability of ICLAS to the absolute concentration and temperature measurements in flames is discussed. The sensitivity of the detection is $1{\cdot}10^{12}$ cm^{-3} and can be improved with isolation of the laser cavity from atmospheric water background.