DISCHARGE MODULATION TECHNIQUE FOR DETECTION OF TRANSIENT SPECIES PRODUCED IN PULSED SUPERSONIC JET BY COLOR CENTER LASER SPECTROSCOPY

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A discharge modulation technique has been applied to color center laser spectroscopy for the detection of radical species generated in a pulsed supersonic jet [a]. Transitions in the ν_3 band of the CH_3 radical rotationally cooled to 23 K were recorded by the phase sensitive detection technique with an improved signal to noise ratio. The sensitivity attained corresponds to 6×10^{-5} absorption.

[a] M. Ishiguro, T. Imajo, K. Harada, and M. Matsubara, K. Tanaka, and T. Tanaka, Chem. Phys. Lett. 263, 629 (1996).