STUDIES OF COLLISIONAL PROCESSES BY MICROWAVE-OPTICAL DOUBLE RESONANCE

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Microwave-optical double resonance provides a powerful method for studying changes in rotational quantum numbers by collisions. Earlier work with thioformaldehyde[a] identified collisional signals from nearby rotational levels when specific rotational levels in the $^1A_2$-state were excited by a laser. This work has now been extended to cover all available levels in the excited state. Collisional selection rules deduced from this work will be presented.

It is suggested that, when suitably powerful near-uv CW lasers become available, a better molecule to study would be formaldehyde. The spectroscopy is well known, the compound can be prepared pure, and well documented mixtures with various collision partners can be prepared.

[a]J.C.Petersen and D.A.Ramsay, Chem.Phys.Lett. 118, 31(1985).