

MICROWAVE SPECTROSCOPY AT THE DISSOCIATION LIMIT

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An ion beam technique has been developed which allows energy levels lying close to the dissociation limit to be studied by microwave spectroscopy. Electric field dissociation provides a high degree of state selectivity, with corresponding sensitivity. The technique was originally developed to study the spectra of $\text{H}_2^{(+)}$ and its isotopes, but has since been extended to a number of rare gas dimer ions, and one triatomic ion. All of the species studied have open-shell ground states, and exhibit different angular momenta coupling schemes as dissociation is approached. The details will be discussed in this talk.