AN INTRODUCTION TO HIGH RESOLUTION COHERENT MULTIDIMENSIONAL SPECTROSCOPY

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High resolution coherent multidimensional spectroscopy is a technique that can be used to analyze and assign peaks for molecules that have resisted spectral analysis. Molecules that yield heavily congested and seemingly patternless spectra using conventional methods can yield 2D spectra that have recognizable patterns. The off-diagonal region of the coherent 2D plot shows only cross-peaks that are related by rotational selection rules. The resulting patterns facilitate peak assignment if they are sufficiently resolved. For systems that are not well-resolved, coherent 3D spectra may be generated to further improve resolution and provide selectivity. This presentation will provide an introduction to high resolution coherent 2D and 3D spectroscopies.