

MAX PLANCK LECTURE ON NON-EQUILIBRIUM QUANTUM PHENOMENA

Femtosecond Coherent Multidimensional Vibronic Spectroscopy

Multidimensional coherent spectroscopy such as two-dimensional infrared and two-dimensional electronic spectroscopy have become important tools to monitor complex non-equilibrium quantum phenomena. Recently we have developed multicolor spectroscopy combining a train of infrared and optical pulses to probe coupled vibrational and electronic coordinates.

In this talk, I will describe (i) the molecular level information contained in these experiments using a model vibronic Hamiltonian (ii) the experimental layout for performing the measurements and (iii) provide examples of how these techniques can measure vibronic couplings in molecular systems.

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