

# Coherent multiphoton spectroscopy

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Two dimensional IR or electronic spectroscopy is involves mostly up to two-photon resonant excitations. Vibrational potential anharmonicities have been revealed in IR, electronic excitation transport pathways have been revealed in visible range. Is it possible to utilize excitations up to a desired excitation level and what new information could be retrieved? It is demonstrated that oscillator potential surfaces could be sampled up to the dissociation level using simple few pulse design.