

Plenary Talk

PV VIII Wed 9:45 RW 1

Two-dimensional electronic spectroscopy from the visible to the UV — ●GIULIO CERULLO — Politecnico di Milano, Milano, Italy

Two-dimensional electronic spectroscopy (2DES) is the ultimate ultrafast optical experiment, since it provides the maximum amount of information that can be extracted from a system within third-order nonlinear spectroscopy. 2DES allows fundamentally new insights into the structure and dynamics of multi-chromophore systems, measuring how the electronic states of molecules within a complex interact with

one another and transfer electronic excitations [1].

This presentation will review the experimental techniques currently used to perform 2DES in the visible range and will introduce our approach to 2DES, based on a passive birefringent interferometer for the generation of phase-locked pump pulses [2]. We will present a few exemplary results on multi-chromophoric systems and nanostructures and finally discuss the prospects of extending 2D techniques to the UV range, of interest for biomolecules such as DNA and proteins.

[1] T. Brixner et al., *Nature* 2005, 434, 625.

[2] D. Brida, C. Manzoni, and G. Cerullo, *Opt. Lett.* 2012, 37, 3027.