

Plenary Talk

PLV IV Tue 9:45 HS 1+2

Three Pillars of Ultrafast Molecular Sciences: Time, Phase, Intensity — ●ALBERT STOLOW — University of Ottawa & National Research Council, Canada

Three fundamental coupled characteristics of ultrashort laser pulses are their duration (Time), coherence (Phase) and Intensity. All three have played a key role in the development of Ultrafast Molecular Sci-

ences. Using the narrative device of 'three pillars', we discuss: (i) Time: ultrafast wavepacket dynamics and its application to non-adiabatic electronic dynamics in molecules, the fundamental physics underlying charge transfer; (ii) Phase: perturbative and non-perturbative quantum control of molecular dynamics using shaped laser fields; (iii) Intensity: the complex, driven multielectron dynamics of polyatomic systems in strong (ionizing) laser fields.