

Seminar lecture in the framework of International doctoral school in Science

Paolo FRANCESCHINI, PhD student @Università Cattolica del Sacro Cuore and KU Leuven,
will deliver a lecture entitled:

Detection in broadband pump-probe spectroscopy systems based on birefringent wedges

Chairperson: Ph.D student Stefano DANESI

Abstract

In the pump-probe ultrafast spectroscopic technique, the maximum information about the excited-state dynamics under study is obtained by using a broadband probe pulse. The preferable approach for the detection of the wavelength-dependent differential transmission consists in simultaneous measurement of its different frequency components. In the case of high-pulse-energy amplified laser systems running at \sim kHz rep. rate, parallel detection is typically accomplished by a multi-channel line camera; unfortunately, for low-energy laser oscillators running at \sim MHz rep. rate, similar analyzers capable of single-shot detection do not exist.

In this lecture I will introduce an innovative device, suitable for those systems operating in the MHz regime, in which, after the sample, the probe passes through a linear interferometer employing birefringent wedges that creates two phase-locked delayed replicas of the pulse; after being demodulated by a lock-in amplifier, their interferogram is Fourier transformed to provide the differential transmission of the spectrum.

Seminario

Martedì 4 dicembre 2018

Sala Marconi, ore 14.00

Via Trieste 17 - Brescia

International Doctoral Program in
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