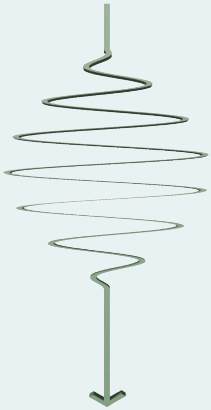


May 8th, 2013 - 11:00

Seminar Room V, CFEL (Bldg. 99, 01.109)



Max Planck
Research
Department
for
**Structural
Dynamics**



SEMINAR

Francesco Randi

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Quantum Optics techniques and interferometry applied to pump-probe experiments

Standard pump-probe experiments measure the intensity of light pulses after their interaction with a sample. Is there any further information we can obtain by studying other properties of the reflected field, for example its phase or its quantum state?

The talk will summarize the main features of Balanced Homodyne Detection (BHD), a standard tool in Quantum Optics used to characterize the quantum state of light, and present a set-up that combines this technique in the pulsed regime with pump-probe experiments on condensed matter. Moreover, this same set-up allows us to study the phase-shift and the fluctuations in the intensity of the probe pulses due to the photo-excitation of the sample, for which some preliminary measurements on “coherent” phonons in Bismuth will be shown.



Host: Andrea Cavalleri, MPD-CFEL