



Tuesday, July 14th 2015 - 11:00
CFEL, Bldg. 99, SR IV, 01.111

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Theory of light-enhanced phonon-mediated superconductivity

In this talk, I will discuss our recent preprint (arXiv:1505.07575), in which we investigate the dynamics of a superconductor driven via a temporal change of the electronic hopping, which mimicks the effect of a resonant THz light pulse transiently modifying the lattice through nonlinear phonon coupling. The induced increase of the density of states near the Fermi-level leads to an enhancement of superconductivity. We provide a time- and momentum-resolved view on the interplay of slow order parameter dynamics and fast single-particle scattering. The importance of electron-phonon coupling for the rapid enhancement and the efficient thermalization of superconductivity is demonstrated.

Host: Andrea Cavalleri

