Max-Planck-Institut für Struktur und Dynamik der Materie

Max Planck Institute for the Structure and Dynamics of Matter

Thursday, May 18th 2017 - 11:00 am
CFEL Seminar room IV (Bldg. 99)

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Spins, Phonons and Phase Separation in Correlated Materials

Electrons, phonons and spins are the key ingredients that make up correlated materials and understanding how these parameters interact is vital for determining their relative interactions. In this talk I will discuss our recent experiments on how to measure these interactions on a range of time and length-scales. I will discuss demagnetization of the antiferromagnetic Mott insulator Cr2O3 as measured through second harmonic generation, in which the demagnetization pathway is dictated by phonons. Then I will discuss the insulator to metal transition in VO2, both in terms of static nano-scale measurements of phase separation measured with resonant soft X-ray holography and dynamic measurements of how the phonon degree of freedom evolves away from the zone centre using time-resolved thermal diffuse scattering.

Host: Andrea Cavalleri

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