



EINLADUNG zum IFP-SEMINAR

New insight into the phase diagram of the cuprates

Martin Greven

University of Minnesota, Minneapolis, USA

Host: Neven Barišić
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Wiedner Hauptstraße 8-10, 1040 Wien
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The discovery of high-temperature superconductivity in the cuprates three decades ago triggered a tremendous amount of scientific activity, yet it has remained a challenge to understand the unusual “normal state” from which the superconductivity evolves upon cooling. I will review our neutron scattering, X-ray scattering and charge transport results for $\text{HgBa}_2\text{CuO}_{4+\delta}$, one of the most ideal cuprates for experimental study due to its high structural symmetry and high superconducting transition temperature of nearly 100 K at optimal hole doping. These experiments reveal an unusual magnetic response, charge-density-wave correlations and Fermi-liquid behavior below optimal hole doping. I will show how the comparison with the properties of other cuprates and the consideration of inhomogeneity gives new insight into the phase diagram of the cuprates.