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High Resolution Angle-Resolved Photoemission Studies of Correlated Electron Systems

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Bjorn Wannberg's invention of the "angle mode" for acquiring 2-dimensional ARPES images with both high energy and angular resolution has revolutionized the way modern ARPES experiments are performed. This advance has led to both quantitative and qualitative improvements in the resolution as well as collection efficiency. In this talk I will give a few key examples of what has become possible using this new technology for the study of correlated electron systems. Particular focus is on high T_c superconductors, including a 'fingerprinting' of electron-boson couplings using the isotope effect, and recent data on colossal magnetoresistive oxides which shows the critical aspect of the orbital degrees of freedom and k-dependent electron self energies.