Unusual band renormalization in the simplest iron based superconductor

Janek Maletz
Institute for Solid State Research, IFW-Dresden, P. O. Box 270116, D-01171 Dresden, Germany

The electronic structure of the iron chalcogenide superconductor $FeSe_{1-x}$ was investigated by high-resolution angle-resolved photoemission spectroscopy (ARPES). The results show some significant differences between the experimental electronic structure of $FeSe_{1-x}$, DFT calculations and existing data on $FeSe_xTe_{1-x}$. The bands undergo a pronounced orbital dependent renormalization, different from what was observed for $FeSe_xTe_{1-x}$ and any other pnictides.