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Comparison of Nematic Electronic Structure in the "Parent States" of $Ca(Fe_{1-x}Co_x)_2As_2$ and of $Bi_2Sr_2CaCu_2O_{8+\delta}$

J.C. SÉAMUS DAVIS, Cornell University, University of St. Andrews, Brookhaven National Laboratory

The mechanism of high-temperature superconductivity in both the cuprate and iron-based superconductors is unresolved. We use spectroscopic imaging STM to compare the electronic structure of representative compounds $Bi_2Sr_2CaCu_2O_{8+\delta}$ and $CaFe_{1.94}Co_{0.06}As_2$– both in the 'parent' state from which this superconductivity emerges. Evidence for fundamental electronic nematicity in both these systems will be presented and discussed.[1]

[1]In collaboration with: T.-M. Chuang, Cornell University, Florida State University; M.P. Allan, Cornell University, University of St. Andrews; Jinho Lee, Cornell University, Brookhaven National Laboratory; Yang Xie, Cornell University; Ni Ni, S.L. Bud'ko, Ames Laboratory U.S. DOE and Iowa State University; G.S. Boebinger, Florida State University; P.C. Canfield, Ames Laboratory U.S. DOE and Iowa State University; M. J. Lawler, Cornell University, Binghamton University; K. Fujita, Cornell University, Brookhaven National Laboratory, University of Tokyo; Jhinhwan Lee, A.R. Schmidt, Cornell University, Brookhaven National Laboratory; Y. Kohsaka Cornell University, Brookhaven National Laboratory, RIKEN; Chung Koo Kim, Cornell University, Brookhaven National Laboratory; H. Eisaki, Institute of Advanced Industrial Science and Technology; S. Uchida, University of Tokyo; J.P. Sethna, Eun-Ah Kim, Cornell University.