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Electronic structure of the C₄ magnetic phase in iron-based superconductors MING YI, MENG WANG, Univ of California - Berkeley, LIRAN WANG, FREDERIC HARDY, PETER SCHWEISS, PETER ADELMANN, THOMAS WOLF, Karlsruher Institut für Technologie, DONGHUI LU, Stanford Synchrotron Radiation Lightsource, SLAC, CHRISTOPH MEINGAST, Karlsruher Institut für Technologie, ROBERT BIRGENEAU, Univ of California - Berkeley — Superconductivity arises in the iron-based materials amongst a host of competing phases. Typically, these competing phases appear as a combination of structural distortion and magnetic ordering in the iron pnictides. However, it has recently been found that in hole-doped Ba122 materials, there exists a magnetically ordered phase that preserves C₄ rotational symmetry. In this talk, I will discuss the electronic structure of this C₄ magnetic phase as measured by angle-resolved photoemission spectroscopy. In particular, we will examine the orbital anisotropy and nesting conditions of this phase, compare and contrast them with those from the neighboring nematic magnetic phase in order to understand the origin of this phase in the iron-based superconductors.

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