

Abstract Submitted  
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**High Resolution Studies of the Electronic Properties of Graphite and the Effect of Disorder** S.Y. ZHOU, Department of Physics, UC Berkeley CA94720 , G.-H. GWEON, C.D. SPATARU, Department of Physics, UC Berkeley CA94720, J. GRAF, MSD, Lawrence Berkeley National Lab 92720, S.G. LOUIE, A. LANZARA, Department of Physics, UC Berkeley CA94720 & MSD, Lawrence Berkeley National Lab 92720 — We report a high resolution Angle Resolved Photoemission Spectroscopy (ARPES) study on the electronic properties of graphite. Data as a function of momentum, photon energy and temperature are presented. We report evidence of very sharp and well-defined quasiparticle peaks. A detailed analysis of the quasiparticle dispersion and scattering rate is presented. Coupling of quasiparticles to collective excitation as well as the effect of interlayer coupling on the quasiparticle is discussed. In addition we report evidence of orientational and potential disorder, coexisting with these sharp quasiparticle peaks and well-defined dispersions. We will give explanations for this paradox and discuss the implications of these results in line with similar effect observed in other correlated materials.

Shuyun Zhou  
UC Berkeley

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