

Abstract Submitted
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Autocorrelation of ARPES Spectra in the Pseudogap State of the Underdoped Cuprates¹ JONATHAN RAMEAU, Brookhaven National Lab, HONGBO YANG, Stony Brook University, CHERISE BURTON, University of the Virgin Islands, TIM KIDD, University of Northern Iowa, MAURICE RICE, ETH Zurich, PETER JOHNSON, Brookhaven National Lab — It has long been known that the normal state of the underdoped cuprate high T_c superconductors is characterized by a pseudogap in the anti-nodal region of the Brillouin zone and a set of disconnected set of excitations at the chemical potential, in the nodal region, known as Fermi arcs. Recently, quantum oscillation and angle resolved photoemission spectroscopy (ARPES) experiments have indicated that these Fermi arcs actually represent one side of a Fermi surface reconstructed into nodal hole pockets. These pockets, as well as a number of consequences of their formation, have been shown to be well described by the phenomenological model of Yang Rice and Zhang (YRZ) for the single particle Green's function. Here, we show how the autocorrelation of ARPES spectra - so-called AC-ARPES – acquired in the normal pseudogap state of the cuprates may be used to examine this phenomenon.

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