
Superconductivity and bond order at the onset of spin-density-wave order in a metal

Andrey Chubukov*¹

¹University of Wisconsin-Madison (UW-Madison) – 1150 University ave, Madison, WI 53706, United States

Abstract

We revisit the issues of superconductivity and charge bond order at the quantum-critical point (QCP) between a 2D paramagnet and a spin-density-wave metal with ordering momentum (π, π) . This problem is highly non-trivial because the system at criticality displays a non-Fermi liquid behavior and because the effective coupling constant for the pairing is generally of order one, even when the actual interaction is smaller than fermionic bandwidth. Previous studies have found that the renormalizations of the pairing vertex are stronger than in BCS theory and hold in powers of $\log^2(1/T)$, *like in color superconductivity. We analyze the full*

*Speaker