Abstract Submitted
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Higgs criticality in a two-dimensional metal SUBIR SACHDEV, DEBANJAN CHOWDHURY, Harvard Univ — We analyze a candidate theory for the strange metal near optimal hole-doping in the cuprate superconductors. The theory contains a quantum phase transition between metals with 'large' and 'small' Fermi surfaces, but the transition does not directly involve any broken global symmetries. The two metals have emergent SU(2) and U(1) gauge fields respectively, and the transition is driven by the condensation of a real Higgs field which carries an adjoint SU(2) charge. We propose a global phase diagram around this Higgs transition, and describe its relationship to a variety of recent experiments on the cuprate superconductors.

Subir Sachdev
Harvard Univ

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