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**A fully fermionic mean field theory of the cuprate superconductors** TIAGO C. RIBEIRO, XIAO-GANG WEN, Massachusetts Institute of Technology — We introduce a new, fully fermionic, mean field approach to the extended  $tJ$  model, which incorporates both hole-like quasiparticle and spin-charge separated excitations, and argue that it is relevant to both hole and electron doped cuprates. We show this approach leads to a mean field phase diagram that closely resembles the one of the cuprate materials and compare it to additional experimental evidence. This theory provides a new non-BCS mechanism leading to superconductivity.

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