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Pairing and superconductivity driven by strong quasiparticle renormalization in two-dimensional organic charge transfer salts JUN LIU, JOERG SCHMALIAN, Iowa State University, NANDINI TRIVEDI, Ohio State University — We introduce and analyze a variational wave function for quasi two-dimensional kappa-(ET)2 organic salts containing strong local and nonlocal correlation effects. We find an unconventional superconducting ground state for intermediate charge carrier interaction, sandwiched between a conventional metal at weak coupling and a spin liquid at larger coupling. Most remarkably, the excitation spectrum is dramatically renormalized and is found to be the driving force for the formation of the unusual superconducting state.

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