

Abstract Submitted
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Quantum Fluctuations and Pairing in Strongly Interacting Fermi Systems: A Tractable Crossing-symmetric Approach KHANDKER QUADER, Kent State University, T.L. AINSWORTH, Naval Research Laboratory — We carry out a general study of quantum fluctuations and pairing in 3D Fermi systems using a tractable crossing-symmetric approach. The underlying fermionic interactions are taken to be finite-range, non-local, and of arbitrary strength. Our method allows us to obtain quantum fluctuations, such as density, current, spin, and spin-current fluctuations. Pairing interactions in various pairing channels are obtained self-consistently from the competing quantum fluctuations. Here we explore s, p, and d -wave pairing. The sign of the non-local interaction is found to be important for the types of quantum fluctuations exhibited by a system, and consequently the channel of pairing. Consequences for static spin susceptibility and the effective mass are also discussed.

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