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Dynamic Cluster Monte Carlo Study of the Single-Particle Spectra of Strongly-Interacting Fermion Gases¹ SHI-QUAN SU, DANIEL E. SHEEHY, JUANA MORENO, MARK JARRELL, Louisiana State University — We study Feshbach-resonantly interacting fermions near unitarity within the context of the attractive Hubbard model. Our principal focus is the single-particle spectral function for such strongly-interacting fermions, recently probed in radio-frequency spectroscopy and photoemission experiments in cold-atom systems. To obtain quantitatively-accurate results on unitary gases, we apply the Dynamical Cluster Approach (DCA) and the Maximum Entropy method to study this system both in the pair-formation temperature region and in the low-temperature condensed state. Different Quantum Monte Carlo approaches emphasizing different observables are used as the quantum solver in the DCA approach, and the data from different approaches are compared to each other.

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