

Abstract Submitted
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Theory of photoemission spectroscopy of Fermi gases in the BCS-BEC crossover regime above T_c SHUNJI TSUCHIYA, Keio University, JST(CREST), RYOTA WATANABE, Keio University, YOJI OHASHI, Keio University, JST(CREST) — We address recent photoemission experiments on ultracold Fermi gases by the JILA group. We investigate strong-coupling effects on single-particle excitation spectra of Fermi gases in the BCS-BEC crossover above T_c . We calculate the momentum-resolved tunneling current into another hyperfine state, as well as the single-particle spectral weight (SW) and density of states (DOS), within the T-matrix approximation including effects of trapping potential. We clarify the spatial and temperature dependence of SW and DOS, and find that they exhibit the pseudogap behavior around the center of the trap. We compare the spatially averaged spectral weight with the measured excitation spectra, and discuss interpretations of experimental results.

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