

Abstract Submitted
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A Theory for Normal Fermi Gases at Unitarity ERIK WEILER, THEJA DE SILVA, Binghamton University — In this study, we will develop a simple, yet accurate, mean-field-like theory for the normal phase of a unitarity Fermi gas. First, we derive a self-consistent equation for the self-energy using a momentum-dependent coupling constant. Using zero temperature Monte Carlo results as a starting point, we then derive an analytical expression for the momentum-dependent self-energy within one-step iteration. Lastly, we determine the validity of our analytical self-energy by comparing it to fully numerical calculations. Our theory shows excellent agreement with pressure measurements made by Nascimbene, *et al.* in a recent experiment performed by the ENS group.

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