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Theory of rf Spectroscopy in ultracold Fermi Gases¹ WILLIAM SCHNEIDER, The Ohio State University, VIJAY SHENOY, Indian Institute of Science, MOHIT RANDERIA, The Ohio State University — We calculate the rf spectroscopy line shape for three states of the ultracold Fermi gas: (a) the equal spin population superfluid state in the BCS-BEC crossover, (b) the normal Fermi liquid state in a highly imbalanced gas, and (c) the normal Fermi liquid state for a repulsive, balanced gas. We address the question of how rf spectroscopy can make a sharp distinction between a normal Fermi liquid and a paired superfluid at $T = 0$. We also describe the role of final state interactions and of finite temperature effects.

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