

Amplitude oscillations of strongly interacting Fermi superfluids

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Quantum gases with tunable interactions provide a versatile setting to study non-equilibrium dynamics. Here, we study Fermi gases following a rapid quench of the interaction strength and study the subsequent evolution. Within the superfluid phase, these quenches excite oscillations of the order parameter, which we observe directly using Bragg spectroscopy. These amplitude oscillations provide a direct measure of the pairing gap through the BCS to BEC crossover and decay consistent with a power law with a damping exponent that depends strongly on the interactions.

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