

Abstract Submitted  
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**Damping of amplitude modes in a neutral BCS superfluid**

AUSTEN LAMACRAFT, Princeton University — In contrast to Bose-Einstein condensates, fermionic superfluids exhibit an amplitude collective mode related to the internal dynamics of fermion pairs, as well as the phase – or Bogoliubov – mode. Recent work has proposed the existence of a collisionless regime in which highly nonlinear dynamics of the amplitude mode may be observed in systems of fermionic atoms pairing via a Feshbach resonance. Here we examine the damping of this dynamics by the phase mode and the general issue of collisionless dynamics versus the time-dependent Ginzburg-Landau description.

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