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Quench Dynamics in the Presence of a Bath ADAM RANCON, James Franck Institute, ANDREAS GLATZ, IGOR ARANSON, Argonne National Laboratory, KATHY LEVIN, James Franck Institute — Feshbach resonance are now widely used to tune the interaction strength in cold atoms. This allows one to experimentally study the out-of-equilibrium dynamics of a quench associated with instantaneously changing the strength of the interactions between fermionic and bosonic atoms. Previous theoretical studies based on standard time dependent Bogoliubov or BCS theory (for bosons and fermions) have not included the presence of a thermal bath. This bath is essential for ultimate equilibration. In this talk we show how to include the bath following a Leggett-Caldeira type approach. We point out some of the important differences in the quench dynamics between bosonic and fermionic superfluids.

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