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Landau Damping in a Mixture of Bose and Fermi Superfluids

HUITAO SHEN, WEI ZHENG, Tsinghua Univ — We study Landau damping in Bose-Fermi superfluid mixture at finite temperature. We find that at low temperature, the Landau damping rate will be exponentially suppressed at both the BCS side and the BEC side of Fermi superfluid. The momentum dependence of the damping rate is obtained, and it is quite different from the BCS side to the BEC side. The relation between our result and the collective mode experiment in recently realized Bose-Fermi superfluid mixture is also discussed.

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