

Rotating ^3He in Narrow Cylinders - Intrinsic Angular Momentum of $^3\text{He-A}$

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We have studied intrinsic angular momentum problems of Cooper pairs in $^3\text{He-A}$ by measuring rotation deformations of a Mermin-Ho texture (MH) by NMR. MH is the most stable texture in a cylinder with 100 μm diameter, which is about 10 times of dipole healing length under NMR field. Rotation changes of NMR spectrum of MH show that intrinsic angular momentum affects the deformation of the texture, which is a macroscopic structure as our calculation. We think that this shows that all particles in Fermi sphere make the Cooper pairs, and this intrinsic angular momentum turns the direction by the rotation.

Section: Quantum Gases, BEC, Cold Atoms

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