

Effect of Odd-Frequency Cooper Pairing on Pauli Spin Susceptibility in a Superfluid Proximity System

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We report a theoretical study of magnetic response of odd-frequency s -wave Cooper pairs induced in a superfluid proximity system consisting of aerogel and superfluid $^3\text{He-B}$. Using the quasiclassical theory of superfluidity, we analyze Pauli spin susceptibility around the aerogel-superfluid interface. It is shown that the spin susceptibility is enhanced by the formation of the odd-frequency s -wave pairs. As a result, a local peak of the spin susceptibility grows around the interface with decreasing temperature. We discuss how we can detect the odd-frequency pairs via the measurements of the spin susceptibility.

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