Superfluid Helium Quantum Interference Devices: Present Status and Future Prospects

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Josephson weak links between samples of macroscopic systems such as superconductors, superfluids, and Bose-Einstein condensates provide a unique tool with which to explore quantum mechanics and an opportunity for applications based on macroscopic quantum physics. The development of superfluid weak links has led both to the discovery of new physical phenomena and also to the development of superfluid helium quantum interference devices (SHeQUIDs). This talk will describe the physics underlying the SHeQUID and the novel applications and utility of this promising technology.

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