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### **Supercurrent and Interference in Carbon Nanotube Josephson Transistors<sup>1</sup>**

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Carbon nanotubes have emerged as a new model system for quantum dots as well as ballistic one-dimensional conductors. For instance, dissipation is ubiquitous in quantum systems, and its interplay with fluctuations is critical to maintaining quantum coherence. We experimentally investigate the dissipation dynamics in single-walled carbon nanotubes coupled to superconductors, and show that the junction undergoes a periodic modulation between underdamped and overdamped regimes. Finally, I will discuss the observation of Fano-like features in transport conductance spectroscopy on carbon nanotubes, which arise from quantum interference of electron waves in two different channels.

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