

Figure 1: Josephson tunnel (left) and coherent quantum phase slip (right).
(Left) Two superconductors separated by thin insulator (in this case space). Current is produced by superconducting electron pairs tunneling across the insulator.
(Right) Two insulators separated by superconductor. Current is produced by magnetic flux tunneling across the superconductor.

Magnetic field applied perpendicular to the figure

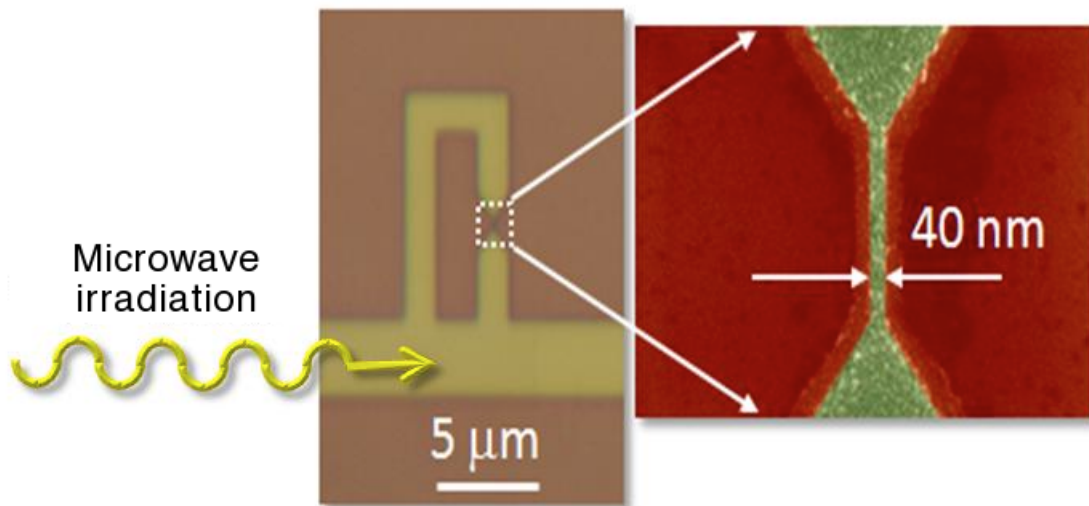


Figure 2: Superconducting loop inserted with thin superconducting wire.

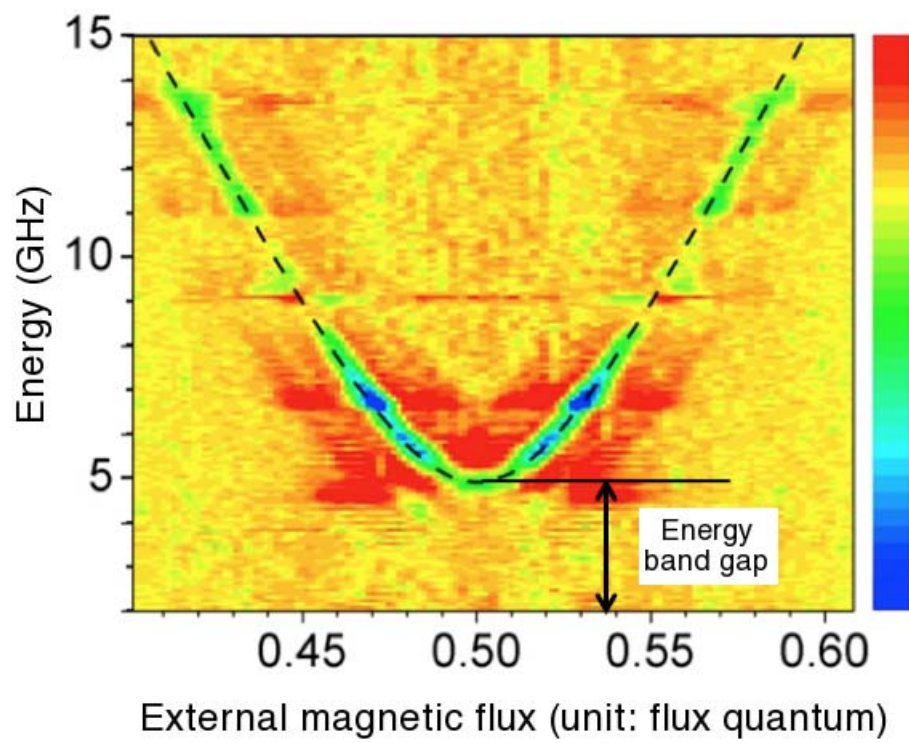


Figure 3: Energy band gap obtained using energy spectroscopy. Existence of band gap establishes that coherent tunneling has occurred.