

QUANTUM DYNAMICS OF VORTICES IN LONG JOSEPHSON JUNCTIONS

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Abstract

We use the edge-current injection technique to elucidate the dynamics of long superconductor–normal metal–superconductor Josephson junctions. Following a theoretical prediction that the junctions with a weak link made of a diffusive metal could sustain Josephson vortices with normal cores, we confirm it demonstrating their presence in MoRe/Pb/Sn-I-Pb heterostructures. It is shown that our devices follow the resistive model of Josephson junctions and contain quantum topological entities (vortices) in the weak link.

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