

Abstract Submitted  
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**Flux Vortex Explosion in Superconductors** CHARLES DEAN, MILIND KUNCHUR, University of South Carolina, Columbia, Q.L HE, H. LIU, J. WANG, R. LORTZ, I.K. SOU, William Mong Institute of Nano Science and Technology, UNIVERSITY OF SOUTH CAROLINA, COLUMBIA TEAM, WILLIAM MONG INSTITUTE OF NANO SCIENCE AND TECHNOLOGY COLLABORATION — Flux vortices are a very interesting phenomenon in condensed matter physics. A flux vortex (fluxon) is a quantized amount of magnetic flux that is contained within a swirling super-current. They undergo many curious effects and various regimes. We investigated an interfacial superconductor and observed a transition in the current-resistance and temperature-resistance which indicates Likharev vortex explosion. This explosion occurs as the coherence length within the material becomes greater than the size of the sample itself. Effectively, this chokes the super-current and causes the vortex to grow and then explode when it exceeds the bounds of the material..

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