Arrays of stacked long Josephson junctions

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June 7, 2000

Abstract

We consider a structure consisting of two parallel arrays of long Josephson junctions sharing a common electrode that allows inductive coupling between the arrays. In the long dimensin this structure supports either the oscillation of coherent fluxon strings in one of the arrays or the oscillation of coherent fluxon-antifluxon strings in both the arrays. Applying an external magnetic field, cavity modes are excited that exhibit synchronization in both the dimensions. The experimental results are explained in terms of analytical and numerical investigation of a model based on coupled Sine-Gordon Equations.