Condensed Matter > Superconductivity

Dynamics of point Josephson junctions in a microstrip line

J.-G. Caputo, L. Loukitch

(Submitted on 3 Apr 2010)

We analyze a new long wave model describing the electrodynamics of an array of point Josephson junctions in a superconducting cavity. It consists in a wave equation with Dirac delta function sine nonlinearities. We introduce an adapted spectral problem whose spectrum gives the resonances in the current-voltage characteristic curve of any array. Using the associated inner product and eigenmodes, we establish that at the resonances the solution is described by two simple ordinary differential equations.

Subjects: **Superconductivity (cond-mat.supr-con)**; Pattern Formation and Solitons (nlin.PS)

Cite as: **arXiv:1004.0409v1 [cond-mat.supr-con]**

Submission history

From: Jean guy Caputo [view email]

[v1] Sat, 3 Apr 2010 01:04:51 GMT (1297kb)

Which authors of this paper are endorsers?