

## Condensed Matter &gt; Superconductivity

# Dynamics of point Josephson junctions in a microstrip line

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We analyze a new long wave model describing the electrodynamic 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.

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