THz Generation Using Fluxon Dynamics in High Temperature Superconductors

N. F. Pedersen and S. Madsen

Abstract—We consider THz emission due to fluxon dynamics in a stack of inductively coupled long Josephson junctions connected electrically to a resonant cavity. By comparing to experiments on Josephson junction parametric amplifiers we consider the role of a negative resistance in connection with THz emission experiments. We suggest that indeed the negative resistance has a big influence on the experimental results.

Index Terms—THz oscillator, negative resistance, BSCCO

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N. F. Pedersen is with Oersted-DTU, Section of Electric Power Engineering, The Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark. S. Madsen is with the Department of Chemistry, University of Aarhus, DK-8000 Aarhus, Denmark