

REFEREE REPORT(S):

Referee: 1

COMMENTS TO THE AUTHOR(S)

PRELIMINARY REPORT BY EDITORIAL BOARD MEMBER

The paper questions the well established BCS theory of superconductivity showing that a non-adiabatic change of temperature coupled with prediction of Meissner effect would lead to internal inconsistencies and ultimately to violation of first and second laws of thermodynamics. However, I am concerned that while doing this they have used phenomenological equations which are normally to be used for systems taken slightly out of equilibrium situations by external drive (as in standard linear response regime of many-body theory). However, they have used it to draw conclusion about non-equilibrium dynamics. I think this is where the problem lies; this guess is supported by the fact that their result obey all standard laws in the adiabatic limit where the cooling is slow. Thus I can not recommend publication of this work.

Letter reference: DSR08