Istituto di Matematica Applicata e Tecnologie Informatiche (CNR)
Dipartimento di Matematica "Felice Casorati"
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Seminario di Matematica Applicata

Martedì 9 dicembre 2003 alle ore 16 a Pavia, nella Sala Conferenze dell'IMATI-CNR (ex IAN), il

Prof. Mauro Fabrizio
(Università di Bologna)

terrà la conferenza:

Problemi evolutivi per le equazioni di Ginzburg-Landau e invarianza di gauge

Abstract. The aim of the presentation is addressed to the study of the Ginzburg-Landau theory that yields the behaviour of a superconductor near to the phase transition. We show that the pertinent equations can be derived starting from the representation of the free energy in terms of the magnetic field H instead of the vector potential A, such that $\mathbf{rot}A = \mu H$ and the modulus $|F|$ which denotes the concentration of superconducting electrons, instead of the complex parameter F. Such a representation gives also a conceptual simplification of the model since it makes use of observable quantities. In addition, the free energy in terms of H and $|F|$ makes the theory gauge-invariant in that is free from the vector potential A and the phase of $|F|$. The compatibility with thermodynamics is examined and it follows that the generality of the second law is related to the specific approximation of the model.

La S.V. è cordialmente invitata.

☕ Dopo la conferenza sarà organizzato un breve rinfresco ☕