

VORTICES IN THE GINZBURG-LANDAU MODEL OF SUPERCONDUCTIVITY

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I will review some results obtained with Etienne Sandier on the vortices in the 2-dimensional Ginzburg-Landau model of superconductivity, with applied magnetic field; as well as present the methods developed to obtain them.

When submitted to an external magnetic field, superconductors exhibit point "vortices" in certain regimes of applied fields. These vortices tend to repel each other and organize themselves in triangular lattices. We will see how, through energy methods and careful description of the vortices, we can calculate the critical fields for which they appear, and derive limiting problems which describe their location, density, etc.