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Stanley Alama and **Lia Bronsard*** (bronsard@mcmaster.ca), Dept. of Math. & Stats., 1280 Main Street West, Hamilton, ON L8S 4K1, Canada, and **Etienne Sandier**. *On the lower critical field for the Anisotropic Ginzburg-Landau model.*

The phenomenon of high-temperature superconductivity has led to the study of the Anisotropic Ginzburg-Landau model as an approximation to the Lawrence-Doniach model for layered superconductors. The anisotropic model is characterized by an effective mass tensor, which favors certain directions via different weight given to the gradient terms in the energy functional. We study the lower critical field (the magnitude of the applied field at which vortices first penetrate the sample) as a function of the angle of the applied field vector relative to the principal axes of the sample. We consider a periodic setting and use Gamma-convergence techniques to identify a limiting functional as the Ginzburg-Landau parameter tends to infinity. (Received August 20, 2007)