Ginzburg-Landau functionals and the Plateau problem. A variational approach.

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I will describe a Γ-convergence result for functionals of Ginzburg-Landau type obtained in collaboration with S. Baldo and G. Orlandi. The main consequence is the following: the Jacobian determinants of minimizers with suitable Dirichlet conditions converge to minimal surfaces M with prescribed boundary, while the corresponding energy densities converge to the area of M.