

# Geometric evolution problems in magnetism

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The relaxation process of a ferromagnet is described by the Landau-Lifshitz-Gilbert system. If exchange is the only term present in the interaction energy, the equation is a hybrid heat and Schrödinger flow for harmonic maps into the 2-sphere. We discuss existence and regularity results based on a new approach to Ginzburg-Landau approximation by means of nonlocal representation formulas.