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Asymptotic behaviour for Landau–Lifshitz and Schroedinger map dynamics

The Landau–Lifshitz equations are a basic model in ferromagnetism, as well as a geometric (and hence nonlinear) version of the Schroedinger (and heat) equation, for which harmonic maps are static solutions. We investigate the long-time dynamics when the energy is near-minimal (given the topology), emphasizing the role of certain “endpoint” space-time estimates.

This is part of a joint project involving M. Guan, K. Kang, K. Nakanishi, and T.-P. Tsai.