

# Landau-Lifshitz dynamics and Schroedinger maps

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## **Abstract**

The Landau-Lifshitz equations of ferromagnetism include, as a special case, a family of geometric evolution equations for maps into the 2-sphere, with the harmonic map heat-flow at one extreme, and the Schroedinger map equation (a geometric generalization of the linear Schroedinger equation) at the other. Understanding the global properties of these map evolution problems is a major challenge. I will describe some recent work concerning the questions of (possible) singularity formation, and of long-time asymptotics. This is joint work with Meijiao Guan, Kyungkeun Kang, and Tai-Peng Tsai.