1172-49-17   **Barbara Kaltenbacher**, **Tram Nguyen*** (tram.nguyen@uni-graz.at), **Anne Wald** and **Thomas Schuster**. *Parameter identification for the Landau-Lifshitz-Gilbert equation in Magnetic Particle Imaging.*

Magnetic particle imaging (MPI) is a novel tracer-based technique for medical imaging. The technique measures the response of the nanoparticles inside patients' blood stream in response to an external oscillating magnetic field. Based on this, the imaging process constructs the particles' spatial-dependent concentration, yielding a map of the blood vessels. Our aim is to determine a reliable model for the system function, a prerequisite for the imaging process. To avoid slow calibration, we use the nonlinear PDE Landau-Lifshitz-Gilbert equation, and study parameter identification in it. The inverse problem of parameter identification is investigated in two settings: a classical reduced version, and a new all-at-once version. (Received July 28, 2021)