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**Dynamic Magnetization Reversal of Single Domain Magnetic Particle with Low Energy Barrier** HUA ZHOU, KAIZHONG GAO, Seagate Technology, SEAGATE TECHNOLOGY TEAM — Magnetization reversal process is one of the most fundamental topics for both basic and applied magnetism. From practical aspect, the reversal at short time, dominated by the precession of magnetization, determines the recording process for HDD and magnetic memory. The reversal at long time scale, dominated by thermal effect, limits the ultimate density for magnetic information storage devices. For thermally assisted reversal, the magnetization switches at short time scale, while the thermal energy is significant as compare to anisotropy energy. Thus the switching criterion and time dependence cannot be described using either formula along. Here micromagnetic simulation is utilized to study the magnetization reversal process under both high temperature and external applied field, with a low energy barrier. The results show how the switching criterion and the time dependent switching rate change for different applied field and temperature. The effect of applied field rise time and time dependent ambient temperature change are also included in this study.

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