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**Thermal Activation Effect on Spin-Transfer Magnetization Reversal** TOSHIYUKI ONOGI, Advanced Research Laboratory, Hitachi, Ltd. — We investigate an effect of thermal fluctuations on the spin-transfer (spin-current-induced) magnetization reversal mechanism for the tri-layer of ferromagnetic/nonmagnetic/ferromagnetic metals, by using the Langevin dynamic simulation method at finite temperatures (T). By calculating the hysteresis magnetization curves based on the current sweep process, we demonstrate that the critical current for the magnetization reversal decreases according to almost T-linear dependence, suggesting an effective thermal assistance for the magnetization switching in the magnetic recording system. We also show that the switching speed is remarkably enhanced by the thermal activation effect. This work was supported by NAREGI Nanoscience Project, Ministry of Education, Culture, Sports, Science and Technology, Japan

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