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**Modeling study on the self-consistent feedback between inhomogeneous magnetization and the spin torque** KYUNG-JIN LEE, Korea University, BERNARD DIENY, SPINTEC, URA CEA-CNRS, France — The Slonczewski's spin torque terms were originally suggested within the context of homogeneous magnetic domain. Micromagnetic [1] and experimental [2] studies have revealed that the magnetizations excited by the spin torque could be inhomogeneous. Therefore we have to find a way of correcting the Slonczewski's terms in describing the magnetization dynamics. We show the self-consistent model to numerically solve the equations of motion of local magnetization and spin accumulation. The self-consistent model enables us to consider the feedback between inhomogeneous magnetization and the spin torque. We found the feedback is crucial in the magnetization dynamics induced by the spin torque. We will show the computational evidence of the importance of the feedback for the current-induced magnetic excitation in a single Co layer and a spin valve structure. [1] K. J. Lee et al. Nat. Mat. 3, 877 (2004); Appl. Phys. Lett. 88, 132506 (2006), [2] Y. Acremann et al. Phys. Rev. Lett. 96, 217201 (2006).

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