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**Reversible spin transfer torque switching of uncompensated noncollinear antiferromagnet** YEN-FU LIU, Institute Of Physics, Academia Sinica, MING-CHIEN HSU, Department of Electrical Computer Engineering, National University of Singapore, Singapore, RALPH SKOMSKI, SY-HWANG LIOU, Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Nebraska, SHANG-FAN LEE, Institute Of Physics, Academia Sinica — New spin-transfer torque approach using uncompensated noncollinear antiferromagnets are investigated by micromagnetic simulations using the generalized Landau-Lifshitz-Gilbert equation. The adventages of antiferromagnetic spintronics include low stray field, insensitive to disturbing external magnetic field, intrinsic high frequency and fast dynamics.[1] Spin transfer torque can efficiently switch or rotate the magnetizations of antiferromagnetic free layer[2, 3] however the switching is not always reversible for collinear antiferromagnet when there is no suitable magnetic anisotropic potential. Slightly uncompensated noncollinear antiferroamgnet has almost cancel magnetization however the residue magnetization and non-collinear nature could make the switching reversible and controllable as efficiently as the ferromagnetic case.

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