Supercurrent-Induced Magnetization Dynamics

JACOB LINDER, Department of Physics, NTNU, TAKEHITO YOKOYAMA, Department of Physics, Tokyo Institute of Technology — We investigate supercurrent-induced magnetization dynamics in a Josephson junction with two misaligned ferromagnetic layers, and demonstrate a variety of effects by solving numerically the Landau-Lifshitz-Gilbert equation. In particular, we demonstrate the possibility to obtain supercurrent-induced magnetization switching for an experimentally feasible set of parameters, and clarify the favorable condition for the realization of magnetization reversal. These results constitute a superconducting analogue to conventional current-induced magnetization dynamics and indicate how spin-triplet supercurrents may be utilized for practical purposes in spintronics.