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Effect of Magnon-induced dephasing on spin transfer torque in magnetic tunnel junctions¹ FARZAD MAHFOUZI, BRANISLAV K. NIKOLIC, Department of Physics and Astronomy, University of Delaware, Newark, DE — In this work we investigate the effect of Electron-Magnon interaction on the spin transfer torque in magnetic tunnel junctions. We use Keldysh Green's function method and consider self consistent Born approximation (SCBA) with finite biased voltage to perform the calculation. We show that in some cases, excitation of the Magnons in the ferromagnet (FM) can enhance the spin transfer torque which is in addition to the increase of the switching rate due to existence of magnons in LLG equation.

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