Abstract Submitted
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Current-induced dynamics in dual spin valves[1] PAVEL BALAZ, A. Mickiewicz University in Poznan, Poland, MARTIN GMITRA, P.J. Safarik University in Kosice, Slovakia, JOZEF BARNAS, A. Mickiewicz University in Poznan, Poland — Current perpendicular to plane passing through a standard ferromagnet/normal-metal/ferromagnet spin valve gives rise to a spin-transfer torque (STT) exerted on magnetic moments of the system, which is proportional to spin accumulation. In the regime of diffusive transport we investigate how the spin accumulation changes if a normal-metal/ferromagnet bilayer is added to the standard spin valve structure (forming a dual spin valve). It has been shown, that varying the angle between magnetizations of outermost fixed layers one can manipulate with the spin accumulation and tune the STT profile: large STT enhancement as well as wavy-like angular dependence, when STT disappears in certain noncollinear configuration, may be achieved. Employing macrospin simulations we predict the current-induced dynamics in a dual spin valves for both current directions. The possibility of ultra-fast switching as well as out-of-plane self-sustained precessions without a need of external magnetic field have been reported.

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