

resistive systems with perpendicular magnetic anisotropy, with the aim of identifying the magnetization orientation through an electrical signal. We measure the all-optical switching in Pt/Co/Pt and Tb₂₇Co₇₃ based Hall crosses via the anomalous Hall effect. This new way of probing the all-optical switching enables a statistical quantification of the switching ratio for different laser parameters. We will present results on hall crosses for both ferrimagnetic and ferromagnetic materials.

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Magnetic behaviour of RCo₂ compounds where R is a heavy rare-earth

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Above the Curie temperatures, in an external field, the magnetic moments of rare earths and cobalt atoms, in RCo₂ (R = Tb, Ho, Er, Tm) compounds, are antiparallely oriented. Some authors correlated this behaviour with the occurrence of short-range magnetic order [1]. Starting from polarized neutron studies, magnetic measurements and band structure calculations, no evidence of magnetically ordered clusters was shown in ferrimagnetic RCo₂ compounds, at $T > T_c$. The relative orientations of R and Co moments are determined by the balance between exchange and thermal energies, as well as that involved by interactions with external fields. The nature of the quantum critical fluctuations was studied. The Grüneisen exponent is in agreement with the 3D-SDWQCP prediction, located at the magnetic transition temperature, T_c .

[1] J. Herrero-Albillos et al, Phys. Rev. B 76 (2007) 094409.