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Magnetization reversal in the orthochromite Y0.5Gd0.5CrO3.¹ ALEJANDRO DURAN, Centro de Nanociencias y nanotecnologia-UNAM, ROBERTO ESCUDERO, RAUL ESCAMILLA, FRANSISCO MORALES, Instituto de Investigaciones en Materiales-UNAM, EDUARDO VERDIN, Departamento de Fisica-UNISON — Complex oxide of transition metal with perovskite structure represent fascinating playground for basic solid state research: new electronics and exotic ground states emerge via the competing interplay like spin, orbital, charge as well as lattice degree of freedom. Accordingly, orthochromites are not exception to the rule. In these compounds have been found ferroelectric polarization, spin reorientation transition along with the characteristic behavior known as; magnetization reversal (MR) consisting that a characteristic temperature, T^{*}, the system becomes diamagnetic. In this work, the magnetic behavior of the equimolar Y0.5Gd0.5CrO3 composition was studied. Negative magnetization was observed at $T^{*}70$ K in FC mode, and applied field of 100 Oe. The characteristic hysteresis loop in the M-H graph of the pristine sample disappears for a wide range of temperature below of T_N , and the characteristic spin reorientation is shifted from 14 K in GdCrO3 to 5 K for Y0.5Gd0.5CrO3. The negative magnetization is explained according the model that take into account the anisotropic and antisymmetric exchange interaction between Gd+3 - Cr+3 sublattice.

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