

Abstract Submitted
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Magnetoresistance measurements in Ferro – Antiferromagnetic bilayers based on the Ca-doped lanthanum manganite system¹ M.E. GOMEZ, L. MARIN, G. RAMIREZ, Physics Department Universidad del Valle Cali, Colombia , P. PRIETO, CENM Colombia — We studied the isothermal magnetic field dependence of the resistance behavior in ferromagnetic–antiferromagnetic interface based on the Ca-doped lanthanum manganite system at temperatures below Neel temperature of the antiferromagnetic layer. We studied the influence of the thickness of the AF-layer, t_{AF} , and F-layer, t_F , on the ZFC and FC magnetoresistance (MR) in $\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3(t_F)/\text{La}_{1/3}\text{Ca}_{2/3}\text{MnO}_3(t_{AF})$ bilayers. H_{FC} was 400 Oe and the applied magnetic field, H . We systematically varied the t_F and t_{AF} thickness, maintaining constant the total bilayer thickness ($d = t_F + t_{AF}$). We found that MR has hysteretic behavior as observed in $[\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3(t_F)/\text{La}_{1/3}\text{Ca}_{2/3}\text{MnO}_3(t_{AF})]_N$ superlattices, but; MR increases with the increasing field from $H=0$ to a maximum and then decreases continuously. This behavior also appears for negative fields in both ZFC and FC loops. The position and magnitude of the maximum is not symmetric with respect to the axis $H=0$.

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