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***Magnetoresistance and Magnetostriction Measured with AFM and STM in Nanocontacts: Graphite with its Defects is Magnetostrictive and Ferromagnetic. (invited)***

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In this work we will describe the last results that our laboratory has obtained in ballistic magnetoresistance (BMR), in thin films, and its relation to magnetostriction as measured with 0.1-0.5 nm resolution by using AFM and STM techniques. Also we will discuss the switching time involved in the change of the resistance under field application. These times are smaller than 10ns showing that the effects in the resistance variation appears to be of MR character. In addition we will show results of our magnetostriction measurements to study materials that even if their perfect structures are not magnetic, when defects are present the system becomes magnetic: *this is the case of graphite.*