

Abstract Submitted  
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**Electrical measurement of antiferromagnetic moments  
in exchange-coupled IrMn/NiFe stacks**

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A great attention is currently focused on the development of new spintronic devices. One crucial technological issue is the coupling phenomena between thin antiferromagnetic (AFM) and ferromagnetic (FM) layers. Despite the exchange coupling was for the first time observed already in 1956, yet the effect is not fully understood. Certainly, the zero macroscopic magnetic moment in the AFM materials hinders the investigation, in contrast to the exhaustive studies on the FM counterpart. Only a very few experiments at large scale facilities explored the status of the AFM layer. Here, we will address the study of both FM and AFM moments in the archetypical IrMn/NiFe exchange-coupled system. Using common laboratory magnetization and transport tools, we found a direct link between reversal of FM moments in NiFe and rotation and pinning of AFM moments in IrMn [1]. We will show that a full rotation of AFM moments in IrMn occurs at high temperatures, in contrast to only partial rotation of AFM at low temperatures. We will discuss the experimental results in the framework of different exchange coupling models. [1] <http://arxiv.org/abs/1108.2189>

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