

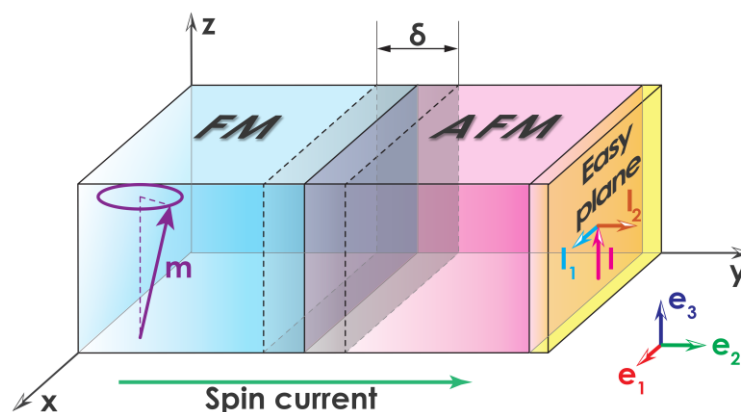
## Boundary conditions at the interface of finite thickness between ferromagnetic and antiferromagnetic

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The interface between ferromagnetic (FM) and antiferromagnetic (AFM) are investigated intensively during last decades, both theoretically and experimentally. Number of papers is dedicated to research of boundary conditions on the interface between FM and various materials, for example the interface of a ferromagnetic layer and a non-magnetic metal [1], as well as on the FM/AFM interface [2]. However the latter type of boundary conditions is insufficiently investigated. We have applied a systematic approach which was used to obtain the boundary conditions for magnetization at an interface between two FM materials in the continuous medium approximation [3] to derive boundary conditions at an interface between FM and AFM materials. Seeing that the boundary conditions are defined in terms of some average properties of the interface, which can have a finite thickness, this approach allows one to take into account the finite thickness of the FM/AFM interface, since the interface is not infinitely thin. The boundary conditions on the FM/AFM interface of finite thickness were obtained for the first time.



**Figure 1.** The FM layer creates spin wave excitations in the AFM layer. Simplified draft of the model of spin current transfer through an AFM insulator based on the experiment [4] and on the investigation [5]

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