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Confirm existence of 90° -type coupling in Fe/MgO/Fe junction by investigating magnetic components perpendicular to the plane of incidence¹ XIAOJING TAN², Department of Physics & Astronomy, University of California, Riverside — We study 90° -type interlayer exchange coupling (IEC) in a Fe/MgO/Fe junction by linear magneto-optical Kerr effect (MOKE) in $p_{in} - p_{out}$ configuration, in which only in-plane magnetization perpendicular to the external field H is detected. By investigating the switching processes of the ferromagnetic vectors from parallel with- to perpendicular to H , we find there is a switching correlation between them: the ferromagnetic vector in the bottom layer always follows the switching direction of that in the top layer. Further analysis shows this kind of switching sequence is the direct consequence of 90° -type coupling between the two magnetic vectors, i.e., 90° -type coupling indeed exists in Fe/MgO/Fe junction.

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