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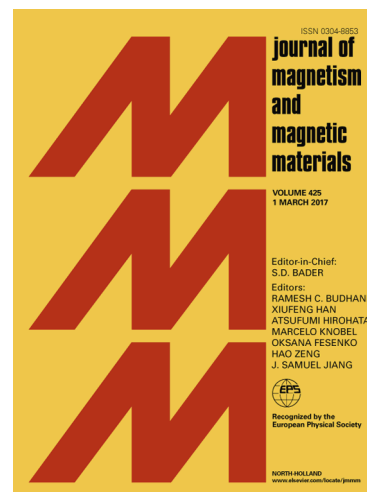
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Electron drag in ferromagnetic structures separated by an insulating interface

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Abstract

We consider electron drag in a system of two ferromagnetic layers separated by an insulating interface. The source of it is expected to be magnon-electron interactions. Namely, we assume that the external voltage is applied to the “active” layer stimulating electric current through this layer. In its turn, the scattering of the current-carrying electrons by magnons leads to a magnon drag current within this layer. The 3-magnons interactions between magnons in the two layers (being of non-local nature) lead to magnon drag within the “passive” layer which, correspondingly, produce electron drag current via processes of magnon-electron scattering. We estimate the drag current and compare it to the phonon-induced one.

Keywords: Electron drag, Ferromagnetic structures, Bilayers

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