Domain-wall resistance at low temperature

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The physical origin of domain-wall resistance in thin films at low temperature is still unclear. In order to distinguish between spin-dependent phenomena and effects of the Lorentz force as origin of low-temperature domain-wall resistance, a dedicated experiment was developed. Additionally, models of ballistic transport in thin films with surface scattering and domain structure are discussed. As a result, at least part of the observed domain-wall resistance at low temperature can be attributed to surface scattering.