

Magnon scattering in the transport coefficients of CoFe alloys

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Resistivity ρ , thermopower \mathcal{S} , and thermal conductivity κ were measured simultaneously on a set of FeCo-films. Variation of the Co-content x_{Co} allows to systematically tune the Fermi level through the band structure, and study band-structure effects on the magnetic contributions to the transport coefficients. While band structure and magnon effects in ρ and κ are rather weak, they turn out to be very significant in \mathcal{S} . The Mott- and magnon-contributions to \mathcal{S} are identified. In addition, we find an interesting sign change of the magnon part that gradually evolves between the two limiting cases of pure Fe and pure Co.