

Kolloquium

Theoretische Physik

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Review of antiferromagnetic spintronics: spin-current induced dynamics of antiferromagnets vs ferromagnets

Antiferromagnetic spintronics is a new fascinating research field focused on manipulation of antiferromagnetic order parameter via charge and spin current. However, dynamics of these processes remain to be fully understood and exploited. The exchange coupling between the sublattices in an antiferromagnets brings about a more complex and in general faster dynamics as compared to ferromagnets. Hence, a large part of the intuitive thinking arising from the ferromagnetic case has to be re-examined in antiferromagnets. In my talk I will present a phenomenological approach for description of spin-current induced phenomena in antiferromagnets with focus on the features that can be relevant for applications and with contrast of anti- and ferro-magnetic dynamics.