# SFB 767

# Colloquium

Universität Konstanz

11 Jan 2018
Coffee and tea 15:15
Talk 15:30
P 603

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## Spin transport through antiferromagnetic insulators

Antiferromagnets fast becoming popular materials in spintronics. Unlike ferromagnets, however, they typically require high magnetic fields or an additional magnetic layer in order to support a spin current. In this talk, we discuss two possible methods to generate spin transport via thermally generated magnons in electrically insulating antiferromagnet/normal metal heterostructures that do not require fields or ferromagnets. First, we show that breaking of the magnetic sublattice symmetry at the metal interface gives rise to a spin Seebeck effect that survives at zero field. Second, the presence of spin-orbit coupling in the normal metals allows for the generation by an electric current of a spin accumulation, which is carried into the antiferromagnet by magnons; we predict a strong enhancement of the corresponding spin conductance as the magnetic field is swept through the spin-flop transition.

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