



Turning up the heat in first principles quantum spin transport

A talk by Paul J. Kelly
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DATE / TIME: Thursday, December 1st 2016, 5:15 p.m.

LOCATION: Erwin Schrödinger- Lecture Hall, 5th floor, Boltzmannngasse 5, 1090 Vienna

In a recent first-principles study of the spin Hall and inverse spin Hall effects [1], we found that the spin Hall effect in Pt increases with temperature and discovered a giant interface contribution at a Permalloy|Pt interface at room temperature with potentially important implications for practical applications. In this talk I outline the method we developed to perform these studies and illustrate it with applications that require us to be able to handle non-collinear magnetism, spin-orbit coupling and temperature-induced lattice and spin disorder.

[1] Y. Liu, Z. Yuan, R.J.H. Wesselink, A.A. Starikov and P.J. Kelly, PRL 113, 207202 (2014)