

EINLADUNG ZUM SONDERSEMINAR  
IEEE Magnetics Society Distinguished Lecture

**Am Freitag, 28.07.2017, um 10:00 Uhr, Raum 46-270**

**Prof. Dr. Eiji Saitoh**

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## **Spin Current Physics and Applications**

Spin current, a spin counterpart of electric current, refers to a flow of electrons' spin angular momentum in condensed matter. Spin current has been ignored in electromagnetism in matter for many years, since it disappears in a very short distance, typically at the sub-micrometer scale. However, recent developments in nanotechnology have enabled us to make minute structures. For example, in integrated circuits composed of nanoscale wires, spin current may become as important a quantity as electric current. Spin current can be detected using the inverse spin Hall effect: conversion of spin current into electricity in condensed matter. As a result, a lot of spin-current-related phenomena have been discovered.

In my talk, I will guide you around the world of spin current science. First, I will give an introduction to the basic concept of spin current, followed by a review of various phenomena discovered using spin current as a guiding principle, such as spin-Seebeck effects, other spin-caloritronics effects, and spin-mechanics effects. The physics and materials science behind these effects will also be discussed.

Der Gast wird betreut von Prof. Dr. B. Hillebrands

**GÄSTE SIND HERZLICH WILLKOMMEN!**