

# KIDS Talk

## “Optically-Reconfigurable Magnetic Materials for the Control of Spin Waves”

Speaker: Marc Vogel, AG von Freymann

Abstract: In our experiments we investigate the propagation of spin waves – eigen excitations of the electrons’ spin system – in a structured magnetic material. The most general approach to control wave properties in a solid body are lithographic methods. We present an alternative technique for structuring and use it for the manipulation of spin waves, namely fully-tuneable light patterns (computer-generated holograms). Optically induced thermal patterns/landscapes modify the spin-wave dispersion relation and, hence, the propagation. Thus, the proposed optically-reconfigurable magnetic material allows for tuning of the magnetic element’s functionality on demand; the same element can be used as a conduit, a logic gate or a data buffering element.

In this talk I will explain the novel concept of optically induced thermal landscapes for the structuring of spin-wave waveguides and the experimental realization. Furthermore, a basic introduction into the field of spin waves and their potential for future applications will be presented.

When: Friday, January 31<sup>st</sup>, 10:00 am

Where: Room 46-387/388

All undergraduate and graduate students as well as postdocs are welcome and encouraged to join our discussion!

For subscription to kids mailinglist, questions, comments or suggestions:  
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\*\*\*\*\* **COFFEE, TEA AND COOKIES WILL BE SERVED** \*\*\*\*\*

