

KIDS TALK

“Bose Einstein condensation of magnon gases”

Speaker: Dmytro Bozhko, AG Hillebrands

Abstract: Recently magnon gases have been recognized as an excellent model environment for the experimental investigation of collective classical and quantum macroscopic properties of bosonic systems. Its potential is due to the wide controllability of the magnon density as well as of the spectral properties influencing the magnon-magnon interaction. For example, the dispersion branch of a magnon gas can be frequency shifted or even drastically modified by change in the strength or orientation of a bias magnetic field. The magnon population density can be effectively controlled by means of electromagnetic parametric pumping. In the simplest case one photon of the pumping electromagnetic field excites two magnons with half the energy (frequency) that propagate in opposite directions. Such a mechanism creates a huge quantity of phase-correlated magnons, which are called a photon-coupled magnon pairs. The behavior of parametrically created magnon condensates, of gaseous magnon phases, and of Bose-Einstein condensates (BEC), which can be formed at the lowest energy state of a magnon gas, constitutes a hot research topic. The investigation of the dynamics of the magnon system in a low-damping magnetic insulator (yttrium-iron-garnet, YIG) has been done using wavevector- and time-resolved Brillouin light scattering spectroscopy.

When: Friday, May 9th 2014, **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 talk mailing list, questions, comments or suggestions: vlauer@rhrk.uni-kl.de

***** COFFEE, TEA AND COOKIES WILL BE SERVED *****

