EINLADUNG
ZUM PHYSIKALISCHEN KOLLOQUIUM

AM MONTAG, 21. JULI 2014 UM 17.15 UHR
HS 46/270

Es spricht: Prof. Yaroslav Tserkovnyak
University of California Los Angeles

Thema:

"Bosonic condensation and spin superfluidity in solid state"

The field of spintronics appears to approach a pivotal point in its development. Despite recent exciting discoveries of myriad spin-to-charge and spin-to-heat coupling effects, where the electron spin forms the cornerstone of diverse magnetoelectric and thermoelectric phenomena, there remains one serious impediment. Practically without exception, the spin transport is accomplished by diffusive carries, which suffer a rapid exponential decay. To compare with traditional electronics, it is as if integrated circuits operated with particles that decay or otherwise escape from the chip. There is a growing optimism, however, that efficient spin transport may be implemented by collective spin propagation through insulating magnetic media. One such route is via bosonic condensation of ferromagnetic magnons into a macroscopically coherent mode. Another approach strives to utilize macroscopic precession of the antiferromagnetic order, in order to realize a spin-superfluid state at room temperature. In this talk, I will discuss some recent theoretical advancements to these ends, while also touching upon the experimental developments that make us enthusiastic about their feasibility.

Der Gast wird betreut von Herrn Prof. Hillebrands.

GÄSTE SIND HERZLICH WILLKOMMEN.
KAFFEEAUSSCHANK AB 17.00 UHR

Kaiserslautern, den 14.07.2014

DIE DOZENTEN DES FACHBEREICHS