IHRS NANONET COURSE

Magnetic Resonance in Nanostructures

Lecturers Dr. Jürgen Lindner and Dr. Kilian Lenz (Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf)

Dates 16-17 June 2014

Location HZDR (Bautzner Landstr. 400), building 712, room 138

Content This course gives an overview on magnetic resonance being a phenomenon that is inherently connected with magnetization dynamics in nanostructured magnetic elements. The theoretical background will be reviewed and explained using simple descriptions. We discuss experimental approaches to detect magnetic resonance and show how this method can be adopted to investigate single magnetic nanostructures. The modern approaches comprise the method of microresonators and alternative detection schemes such as optical and electrical detection. A demonstration of detection of magnetic resonance in the lab will be given

Detailed agenda

Monday, 16 June 2014

09:15 - 10:45 Theory of Spindynamics (J. Lindner)

10:45 – 11:15 Break

11:15 – 12:45 Ferromagnetic Resonance Techniques (J. Lindner)

12:45 – 13:45 Lunch

Tuesday, 17 June 2014

09:15 - 10:45 Magnetic Anisotropy (K. Lenz)

10:45 – 11:15 Break

11:15 – 12:45 Damping mechanisms (K. Lenz)

12:45 – 13:45 Lunch

13:45 – 15:15 Magneto-Optical Methods for investigating spin dynamics (H. Schultheiß)

15:15 – 16:45 Visit of laboratory
(visualizing magnetic resonance in a simple demonstration experiment as well as detecting the resonance signal with an up-to-date setup. etc…)