

Soutenance HDR

Mercredi 20 juin 2018

13 h 30

Salle 44 (Pierre Grivet) – C2N Site Orsay

Monsieur Joo-Von KIM

"Noise, chirality, and chaos in the dynamics of magnons and magnetic solitons"

Composition du jury proposé

Hans-Benjamin BRAUN – Rapporteur – University College Dublin

Ursula EBELS – Rapporteur – Spintec, Grenoble

Jan VOGEL – Rapporteur – Institut Néel, Grenoble

Claude CHAPPERT – Examineur – Centre de Nanosciences et de Nanotechnologies, Orsay

Thibaut DEVOLDER – Examineur – Centre de Nanosciences et de Nanotechnologies, Orsay

Eric FULLERTON – Examineur – University of California at San Diego

Claudio SERPICO – Examineur – Università di Napoli "Federico II"

André THIAVILLE – Examineur – Laboratoire de Physique des Solides, Orsay

Résumé

Nanoscale magnetism offers a rich playground for studying nonlinear phenomena. I will discuss work I have undertaken on the stochastic theory of spin-torque nano-oscillators, nanocontact vortex oscillators including chaotic phases, channelling and nonreciprocal spin wave propagation in chiral systems, thermally-driven domain wall processes, and skyrmion dynamics. I conclude with some perspectives that follow from this research, namely chaos-based information processing, time-delay phenomena in micromagnetism, and stochastic processes in chiral magnets.

