

Meetings of the Belgian Quantum Physics Initiative

Colloquium



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Electronic spin currents and magnetization dynamics: from current-driven domain walls to black holes

Over the past two decades spintronics has been concerned with utilizing the electron spin rather than its charge. Most of the envisioned applications make use of the interaction between spin currents and magnetization dynamics in ferromagnets, and a great deal of research has been devoted to understanding, characterizing and controlling these interactions. In this talk I will review these developments. I will in particular discuss the examples of i) magnetic domain walls, and how their motion can be controlled by spin currents, ii) the interaction between electron spin and the magnetization in insulators near an interface, and iii) how the interaction between spin currents and magnetization dynamics can be used to implement black-hole horizons for spin waves.

Thursday 15 FEBRUARY 2018 AT 4.00 P.M.

COFFEE AND TEA WILL BE SERVED AT 3.00 P.M.

Two short talks will be given **before** the Colloquium:

2pm: Ben Van Duppen (Antwerp Univ.)

«Seeing quantum effects in graphene»

2:30pm: Tomoki Ozawa (ULB)

«Driven-dissipative Hall effect in photonic and classical mechanical lattices»

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