

Seminar by Reza Rouzegar

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Novembre 17th 2026 11:00am

Room Alnot 4-A014, IJL

From Noise to Signal: Ultrafast Spin Dynamics Across Length and Time Scales



Rapid advances in spintronics demand measurement techniques capable of resolving magnetic phenomena over a vast range of timescales while achieving nanometer-scale spatial resolution.

We begin with ferromagnetic resonance (FMR) as an entry point into spin dynamics, and then turn to ultrafast demagnetization. We discuss magneto-optical effects and THz spectroscopy as powerful probes of ultrafast spin dynamics, offering time resolutions on the order of tens of femtoseconds and providing insight into the microscopic mechanisms that drive ultrafast

demagnetization.

We then explore approaches for adding spatial resolution, including MOKE microscopy and THz-SNOM, which extend access to spin dynamics across the nanoscale.

Throughout the talk, we highlight the experimental techniques and instrumentation that enables precise and reliable measurements.

Séminaire organisé dans le cadre du programme interdisciplinaire MAT-PULSE + Prof@Lorraine (IRP UL-Cambridge)



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