

## **From All-Optical Switching to Picosecond-Reversal in Spintronics**

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Spintronics involves the use of the spin degree of freedom in information processing devices and systems. In particular, magnetic data storage based on spinning hard disks has emerged as the first large-scale application of spintronics. Nowadays magnetic random access memory (MRAM) is emerging as a good compromise for integrated on-chip non-volatile memory with low energy consumption. However the speed of spintronics is limited by the precessional dynamics of the magnetic medium making it inherently slow compared to charge-based devices based on transistors. In this talk we will highlight how the recent developments in the field of all-optical switching helped us succeed in switching a ferrimagnet with a single sub-10 ps electrical pulse thus enabling new possibilities for THz spintronics devices.

### *About the Speaker:*

Charles-Henri Lambert is a post-doctoral researcher in Prof. Sayeef Salahuddin's group at UC Berkeley. He received an Engineer degree with a major in Materials Science at the Ecole des Mines de Nancy together with a M.Res. in Nanomaterials at the Imperial College in London in 2012. He then graduated with a Ph.D. in Physics at the University de Lorraine including a stay at the UC San Diego. His research interests include ultrafast optics, spintronics and new phenomena in nanomagnetism.