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3D Magnetic Vector Imaging: towards Experimental Micromagnetism

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The study of the three-dimensional behaviour of the magnetisation vector field at the nanoscale is of paramount importance for the magnetism community. The access to this information provides the fundamental information necessary to properly understand the physics and phenomena present in magnetic systems. In general, the actual methodology to study the magnetisation states at the nanoscale is based on the combination of 2D magnetic imaging and micromagnetic simulations/modelling. However, the recent development of 3D magnetic vector imaging techniques [1,2,3] allowing for a direct characterisation of the 3D magnetisation configuration with no prior assumptions [4,5,6], is opening the way towards a change of paradigm and the realisation of Experimental Micromagnetism. In this talk the idea behind the vector magnetic imaging methodology will be presented as well as its application to different X-ray based magnetic imaging techniques.

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