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Nanomagnetism in Three Dimensions: Tools, Textures, and Dynamics (I)

Thursday 19 June 2025 09:00 (1h 30m)

Simulating magnetic textures and their dynamics is a cornerstone of modern magnetism research. While micromagnetic methods are well-established, the rise of three-dimensional nanomagnetic systems introduces new complexities that demand advanced tools. Finite-element simulations are uniquely suited to capture geometric and topological effects inherent in 3D nanostructures. In this mini-lecture, I will present recent research that leverages finite-element micromagnetics to explore the structure and dynamics of complex 3D magnetic textures. Particular focus will be given to frequency-domain methods for efficiently modeling high-frequency oscillatory dynamics in these systems.

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