

First principles spin-dynamics simulations, theory and applications

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We present a theoretical background for first principles, atomistic spin dynamic simulations. A comprehensive summary of all pertinent details for performing the simulations such as equations of motions, models for including temperature, methods of extracting data and numerical schemes for performing the simulations is given. Areas of potential applications to different magnetic questions are also discussed., e.g. spin-glass materials, ultrafast switching phenomena, diluted magnetic semiconductors as well as materials for where a macrospin model breaks down.

9.7 cm

13.4 cm

Subject category :

2. Quantum and Classical Spin Systems

Presentation mode :

invited

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