

## **Spin models for computational magnetism**

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Spin models are important for the understanding of thermal and dynamic properties of magnetic materials. In this lecture I will first present basic concepts of spin models and statistical mechanics as well as the corresponding numerical methods, namely Monte Carlo simulations and Langevin dynamics. In view of multi-scale modelling the connection to first principles calculations and large-scale micromagnetic simulations is presented as well. Finally, modern applications of these methods to ultrafast magnetisation dynamics and in spin-caloritronics are discussed.