Im Rahmen des Physikkolloquiums spricht

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über

The art of modeling in solid state physics

Abstract:
The explanation of physical phenomena requires idealization and modeling. Models must be sufficiently simple, but not too simple. This strategy is illustrated in the case of ferromagnetism in solids where very many degrees of freedom cooperate. In this context electronic correlations play an important role. They refer to effects which cannot be explained if the interaction acting on a particle is approximated by a static cloud ("mean field") provided by the other particles. Electronic correlations strongly influence the electronic and magnetic properties of matter. In my talk I will present a basic introduction into the concepts of correlated electronic systems and how to model them.