

**Oberwolfach Workshop:**

Many-Body Quantum Systems and Effective Theories

**Organisers:**

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**Abstract:**

In the last years, substantial progress has been made in many areas of mathematical physics. The goal of this workshop is to bring together researchers working on analytic and probabilistic aspects of many-body quantum systems and quantum statistical mechanics, to discuss recent developments, exchange ideas and propose new challenges and research directions. Among the questions we plan to focus on during the workshop are the derivation of effective equations, the analysis of physically interesting nonlinear partial differential equations emerging from microscopic theories, the study of open quantum systems in and out of equilibrium, and the investigation of the ground state properties and of the dynamics of quantum spin systems.