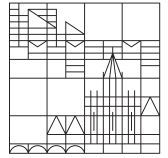# KWIM-Festtage

celebrating the end of the project
Konstanz Women in Mathematics

Rigorous derivation of kinetic equations from particle systems

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Abstract. The problem of deriving macroscopic evolution equations from the microscopic description based on the fundamental laws of mechanics, through suitable scaling limits, is one of the most central problems of non-equilibrium statistical mechanics. Such derivations are crucial to determine the reliability and to identify the range of validity of the macroscopic equations. In this talk we consider a simple microscopic model, the Lorentz Gas, which reduces a many-body problem into an effective single-particle system that consists of a test particle and a static background. We will show how a rigorous validation of different linear kinetic equations can be provided from this particle model.