**Prof. Marcello Porta**
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**Title:** Universality of transport in solid-state systems

**Abstract:** The Renormalization Group (RG) is a powerful tool for the study of the large-scale properties of statistical mechanics systems at criticality. Starting from the pioneering work of Kenneth Wilson in the 70s, it has allowed to compute critical exponents with high precision, and to define universality classes. Recently, a rigorous version of the Wilsonian RG has been used to study the transport properties of a wide class of interacting solid-state systems, ranging from topological insulators to graphene and to Weyl semimetals. In this talk I will discuss how the combination of rigorous RG and gauge-theoretic ideas can be used to explore universality classes, and to prove quantization of transport coefficients for many-body quantum systems. Based on joint works with G. Antinucci, A. Giuliani, I. Jauslin and V. Mastropietro.