Abstract. The renormalization group is a mathematical tool used in the analysis of systems with infinitely many degrees of freedom associated with length scales. The workshop presents recent work in this domain concerning probability theory, statistical and solid state physics and field theory as well as the methodology of the renormalization group.

Mathematics Subject Classification (2000): 1311,1312,1313,1314.

Introduction by the Organisers

The workshop on *The Rigorous Renormalization Group*, was attended by more than 40 participants coming mainly from Western Europe and from America. The official programme consisted in 19 lectures of 60 minutes each (plus discussion). Four of them were devoted to noncommutative field theory, three of them presented methods used for and results on the construction of a non-gaussian fixed point in a statistical mechanics/quantum field theory model, and two lectures concerned, respectively, nonlinear \( \sigma \)-models, the functional renormalization group, and quantum electrodynamics. The remaining six lectures were on the Brockett-Wegner version of the renormalization group, on random walks, on Fermi liquids, on anomalies in quantum field theory, on renormalization in curved spaces and on functional integrals for many boson systems. The scientific programme, the atmosphere and the Oberwolfach style of the meeting, leaving much room for informal discussions and joint work, were generally highly appreciated. The abstracts of the lectures are presented in chronological order.