FOREWORD

The theory of quantum groups is a rapidly developing area with numerous applications in mathematics and theoretical physics, for example there are deep connections with representation theory, link and knot invariants in topology, q-special functions, and quantum integrable models. Originally developed in the 1980s by mathematicians and physicists, they extend the concept of symmetry groups by introducing a deformation parameter. This parameter allows quantum groups to generalize classical Lie groups and Lie algebras. There has, however, not been enough dialogue between the quantum group community and the Lie theory and differential geometry communities. One of the aims of the CA21109 - COST Action CaLISTA is to address this problem and create a space where the two communities can talk and interact. Major problems that can benefit from such a conversation appear in the ongoing program to formulate a general theory of noncommutative differential geometry for Drinfeld–Jimbo quantum groups, and the question of q-deformation for locally compact real Lie groups. This was the principal aim of the training school *Quantum Groups and Noncommutative Geometry in Prague* held at the Charles University in September 2023, and this is also reflected in the articles appearing in this thematic volume.

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