

Introduction to  $K$ -theory and Elliott classification program

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The Elliott classification program predicts classification of certain  $C^*$ -algebras using the  $K$ -theoretic data. Starting from ICM 1990 by Elliott's conjecture, many researchers contributed to this program by finding larger and larger classifiable classes of  $C^*$ -algebras such as simple purely infinite ones and those with tracial rank zero. However, counterexamples were found by Rordam and Toms in 2002 and 2008, leading to modifications of the conjecture. In several talks, we give an introduction to  $C^*$ -algebras, their  $K$ -theory, and new results and ideas about the Elliott program.