Classification of C^*-algebras I, II

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Abstract

In these talks, I will discuss some of the major work over the years in the ongoing project to classify C^*-algebras. I will begin with a general discussion about C^*-algebras and their importance and applications, and some general comments about what it means to classify objects in mathematics. I will then briefly discuss classifications of historical importance: commutative C^*-algebras and continuous trace and Type I C^*-algebras, where ideas from topology come into the picture in a fundamental way, and injective factors. I will describe in more detail the classification of uniformly hyperfinite (UHF) C^*-algebras, leading to K-theory, and then describe how K-theory has been used in recent years to obtain classification results about large classes of C^*-algebras. The classification program is an ongoing one, with much fundamental work remaining, but has already moved far beyond what would have been thought possible 15 years ago.