

**OBERWOLFACH WORKSHOP**  
**“NONCOMMUTATIVE HARMONIC ANALYSIS AND QUANTUM**  
**INFORMATION”**

**Abstract.** The main aim of this workshop is to unite researchers from the fields of noncommutative harmonic analysis and quantum information theory. Quantum information theory deals with the way information can be exchanged using the laws of quantum mechanics. The field is relatively young, but has seen extraordinary rapid development over the past decade. The particular focus of this workshop is the *analysis* of quantum information theory and its connections to infinite dimensional systems and operator algebras. On the other hand the theory of noncommutative harmonic analysis has established itself further in a parallel development, with successful attempts at generalizing the theory of singular integrals and Fourier multipliers in the noncommutative realm. While there are close ties between the mathematics underpinning noncommutative harmonic analysis and quantum information theory, the two fields have so far remained largely disjoint, despite ample evidence that there would be fruitful cross pollination between the two. This is precisely what we hope to achieve in this workshop, which will bring together some of the leading experts in both fields, as well as talented young mathematicians.