SOME HARMONIC ANALYSIS QUESTIONS SUGGESTED BY UNIQUE CONTINUATION AND CONTROL THEORY OF SCHRODINGER EQUATIONS

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Venue: Room 2213, East Main Guanghua Tower

Abstract：In this talk, we mainly discuss two kinds of uniform resolvent estimates, as well as their applications in various problems in PDE.

The first one is a classical Lp uniform resolvent estimate established by Kenig-Ruiz-Sogge in the 1980s, it's related to the restriction theory in Harmonic Analysis. Furthermore, it can be applied to study unique continuation problems of Schrodinger operators with singular potentials.

The second one is a L2 type of uniform resolvent estimate, which is equivalent to the exact controllability for the Schrodinger equation. Based on this inequality, we shall give some recent results concerning the observability of the Schrodinger equation with potentials. We mention that Uncertainty Principles in Harmonic Analysis can be powerful tools to deal with such problems.