## THE UNREASONABLE EFFECTIVENESS OF OPERATOR ALGEBRAS: BRIDGING BETWEEN GEOMETRY AND QUANTUM THEORY

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Starting from the work of von Neumann, the theory of operator algebras has provided an elegant and powerful setting for studying problems in mathematics and quantum theory. To paraphrase Eugene Wigner, the theory has been unreasonably effective in providing an elegant setting for various problems in geometry, topology, dynamical systems, geometric group theory, number theory, as well as quantum field theory, solid-state physics, and high energy physics. In this talk I will discuss the basics of the theory as well as some of its recent successes.