

Operator spaces: A new category of functional analysis. Basic theory, applications, and new frontiers

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The theory of operator spaces began with the study of operator algebras, but it took off in a very different direction with the advent of the fundamental theorem of Z.-J. Ruan, which appeared in 1987. Since then, both the abstract theory and its applications to such areas as Banach Algebras, Harmonic Analysis, Complex Analysis, Probability Theory, and Operator Algebras have been developing rapidly. In this talk, the basic theory will be outlined and some of the applications will be described. Many of these applications lead easily to open problems worthy of investigation, both in the area of the application and in the development of the basic theory.