"Recent results on isometries of nonlinear spaces of functions and operators"

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The study of the structure of isometries of spaces of functions and operators is a really old but still active research field within functional analysis. The most classical result of the field is due to Banach (1932) and Stone (1937) and it describes the surjective linear isometries of the Banach space of all continuous scalar-valued functions on a compact Hausdorff space. Important extension of this result to the setting of C^*-algebras was given by Kadison (1951). All those theorems concern linear isometries on linear spaces of functions and operators. Recently, we have obtained several structural results of similar spirits for nonlinear isometries of nonlinear spaces of functions and operators. In this talk we collect some of them relating to the Kolmogorov-Smirnov and Lévy isometries of spaces of probability distribution functions, the norm-isometries of the unitary group of a Hilbert space, and the Thompson isometries of the space of positive definite operators.