Seminar/Talk

Preserver problems on positive matrices and characterizations of central elements in C*-algebras

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Given a set equipped with an additional structure (such as an algebraic operation, a distance-like measure of dissimilarity of the elements, a relation, etc.) the description of the transformations preserving this structure is of a particular importance. Such problems are called preserver problems. First, we give a brief overview of the classical results in the field of preserver problems (e.g., the Mazur-Ulam theorem, and Wigner´s theorem on the quantum mechanical symmetry transformations). Then we present some of our quite recent results on certain geometric preserver problems on (distinguished subsets of) positive matrices.In the second part of the talk we collect some classical statements that describe connections between the commutativity of a C*-algebra and the basic properties (monotonicity, convexity) of certain functions defined on this C*-algebra by functional calculus.The starting point will be Ogasawara´s theorem which states that a C*-algebra is commutative if and only if the square function is monotone increasing on the positive cone.Finally, we will show some of our recent results which describe connections between the centrality of an element of a C*-algebra and the local monotonicity and convexity properties of certain functions.

Tuesday, October 24, 2017 04:00pm - 06:00pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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