Title: Characterizations of centrality in C^*-algebras via local convexity of functions

Author(s): Gergő Nagy

In this paper, we give a characterization of central elements in a C^*-algebra $\mathcal{A}$ in terms of a local property of maps on $\mathcal{A}$ given by the functional calculus. We prove that if f denotes one of the functions $x \mapsto \exp(x)$, $x \mapsto x^3$ $(x \in \mathbb{R})$, a self-adjoint element $a \in \mathcal{A}$, which is also positive in the case where f is the latter map, is central if and only if f is locally convex at a.

Address:
Gergő Nagy
Institute of Mathematics
University of Debrecen
P. O. Box 400
H-4002 Debrecen
Hungary
and
HUN-REN-UD Equations, Functions, Curves
and their Applications Research Group