PAUL SKOUFRANIS, York University
Majorization, Convexity, and Expectations

The notion of majorization of spectral distributions yields a partial ordering on the collection of self-adjoint $n \times n$ matrices that has a wide variety of uses such as describing convex hulls of unitary orbits and describing expectations onto maximal abelian self-adjoint subalgebras. In this talk, extensions of these structures and results will be discussed in the context of C*-algebras. In particular, a notion of majorization of self-adjoint operators in any C*-algebra will be described that characterizes the norm closed convex hull of the unitary orbit of any self-adjoint operator in any C*-algebra. Furthermore, expectations of these convex hulls will be discussed in the context of von Neumann algebras.
(Based on joint work with Matthew Kennedy, Ping Wong Ng, and Leonel Roberts)