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Title: Unitarily invariant norms and factor von Neumann algebras

Abstract: In 1937 J. von Neumann characterized all norms on the $n \times n$ complex matrices that are invariant under left and right multiplication by unitary operators. We extend von Neumann's theorem to all factor von Neumann algebras, and we apply our results to the noncommutative L_p -theory. This is joint work with Don Hadwin, Eric Nordgren and Junhao Shen.