המחלקה למתמטיקה, בן-גוריון

קולוקוויום

ההרצאה

and boundaries Arveson convexity, Matrix problems Tsirelson

תינתן על-ידי

Copenhagen) of (University On Dor Adam

תקציר: Following work of Evert, Helton Klep and McCullough on free linear inequality matrix domains, we ask when a matrix convex set is the closed convex hull of its (absolute) extreme points. This is a finite-dimensional version of Arveson's non-commutative Krein-Milman theorem, which may generally fail since some matrix convex sets have no (absolute) extreme points. In this talk we will explain why the Arveson-Krein-Milman property for a given matrix convex set is dfficult to determine. More precisely, we show that this weak property for certain commuting tensor products of matrix convex sets is equivalent to a weak version of Tsirelson's problem from quantum information. This weak variant of Tsirelson's problem was shown, by a combination of results of Kirchberg, Junge et. al., Fritz and Ozawa, to be equivalent to Connes' embedding conjecture;

algebras. operator in problems open important most the of one be to considered embedding Connes' of formulation equivalent another provide just than more do We Tsirelson weak of variants matrix-geometric new provides approach Our conjecture. than out rule to easier be may which polytopes, convex of pairs for problems type problem. Tsirelson weak original the

Sinclair Thomas and Araiza Roy with work joint on Based