

1135-46-1513

Eric Michael Evert* (eric.m.evert@gmail.com). *Matrix Convex Sets Without Absolute Extreme Points*. Preliminary report.

This talk will give an example of a class of closed bounded matrix convex sets which do not have absolute extreme points. The sets considered are noncommutative sets, K_X , formed by taking matrix convex combinations of a single tuple X . In the case that X is a tuple of compact operators with no nontrivial finite dimensional reducing subspaces, K_X is a closed bounded matrix convex set with no absolute extreme points.

A central goal in the theory of matrix convexity is to find a natural notion of an extreme point in the dimension free setting which is minimal with respect to spanning. Matrix extreme points are the strongest type of extreme point known to span matrix convex sets; however, they are not necessarily the smallest set which does so. Absolute extreme points, a more restricted type of extreme points that are closely related to Arveson's boundary, enjoy a strong notion of minimality should they span. This result shows that matrix convex sets may fail to be spanned by their absolute extreme points. (Received September 22, 2017)