Department of Mathematics, BGU

Operator Algebras and Operator Theory

On *Monday, January ,29 2024*

At *14:00 – 15:00*

In *201*

Eli Shamovich (BGU)

will talk about

From noncommutative rational functions to peaking states on the Cuntz algebra

Abstract: The noncommutative (nc) disc algebra $\mathcal{A}_d$ was studied extensively first by Popescu. It is the norm closed operator algebra generated by the left creation operators on the full Fock space. This algebra is semi-Dirichlet. Namely, $\mathcal{A}_d^*\mathcal{A}_d \subset \overline{\mathcal{A}_d + \mathcal{A}_d^*} = \mathcal{S}_d$. Therefore, one can perform a GNS type construction to obtain representations of $\mathcal{A}_d$ from states on $\mathcal{S}_d$. This observation is one of the ingredients in the nc Clark theory developed by Jury and Martin.

In this talk, I will focus on nc rational functions and, in particular, inner ones. I will show how one obtains from an nc inner rational a finitely-correlated state (Bratteli and Jorgensen) on the Cuntz algebra. Connect the finitely-correlated states to minimal isometric dilations of finite-dimensional row coisometries and the work of Davidson, Kribbs, and Shpigel. Lastly, I will show that many finitely-correlated states are peak states in the sense of Clouatre and Thomson.

This talk is based on joint works with Mike Jury and Rob Martin.