Department of Mathematics, BGU

Operator Algebras and Operator Theory

On *Monday, November ,14 2022*

At *16:00 – 17:00*

In *101- (basement)*

Eli Shamovich (BGU)

will talk about

Representations of the Cuntz algebra from noncommutative rational functions

Abstract: In this talk, I will describe joint work with Mike Jury and Rob Martin. The focus of this talk will be on noncommutative (NC) rational function, i.e., elements of the free skew field on d generators. Suppose such a function is bounded on all finite-dimensional row contractions. In that case, it admits an inner-outer factorization as elements of the free semigroup algebra (analogous to the classical factorization in function theory on the disc). Both the inner and outer functions are NC rational, as well. I will describe the theory behind this factorization and discuss how one obtains representations of the Cuntz algebra $\mathcal{O}_d$ from inner elements of the free semigroup algebra. I will show that from NC rational inners, one obtains the finitely-correlated representations introduced by Bratelli and Jorgensen. I will finish the discussion with some open questions.