

Department of Mathematics, BGU

Noncommutative Analysis

On Wednesday, September 14, 2022

At 14:00 – 15:00

In 101-

Or Elmakias (BGU)

will talk about

Constrained Pick interpolation for multiply connected domains

Abstract: The Pick interpolation theorem states that the existence of a function on the complex unit disc that is analytic, bounded by 1 and satisfies some interpolation data is equivalent to the positivity of a matrix that depends on the interpolation data. In 1979 Abrahamse generalized this result from the disk to any g -holed multiply connected domain. However, in the result of Abrahamse, a family of matrices parametrized by the g -dimensional torus was needed. In 2010, a variation of the Pick interpolation problem was studied by Davidson, Paulsen, Raghupathi, and Singh, who discovered that if the constraint of zero derivative at a point is applied to the interpolating function, then there is a family of matrices parametrized by the unit sphere that need to be positive. In my thesis, I have combined these results to solve a constrained interpolation problem on a multiply connected domain. I will present the ideas that prove these kinds of interpolation theorems, that were first applied to that case by Sarason,

and will show how I used them for the constraint-multiply connected problem. If time allows it, I will also say a few words about matrix-valued interpolation.

Please Note the Unusual Day, Time and Place!