Department of Mathematics, BGU

Colloquium

On *Tuesday, May ,14 2019*

At *14:30 − 15:30*

In *Math 101-*

Orr Shalit (Technion)

will talk about

Dilation theory: fresh directions with new applications

Abstract: Dilation theory is a paradigm for understanding a general class of objects in terms of a better understood class of objects, by way of exhibiting every general object as "a part of" a special, well understood object. In the first part of this talk I will discuss both classical and contemporary results and applications of dilation theory in operator theory. Then I will describe a dilation theoretic problem that we got interested in very recently: what is the optimal constant $c = c_{\theta,\theta'}$, such that every pair of unitaries U,V satisfying $VU = e^{i\theta} UV$ can be dilated to a pair of cU', cV', where U',V' are unitaries that satisfy the commutation relation $V'U' = e^{i\theta'} U'V'$?

I will present the solution of this problem, as well as a new application (which came to us as a pleasant surprise) of dilation theory to the continuity of the spectrum of the almost Mathieu operator from mathematical physics.

Based on a joint work with Malte Gerhold.