Department of Mathematics, BGU

# Colloquium

**On** *Tuesday, December ,2 2025*

**At** *14:30 – 15:30*

**In** *Math 101-*

Dmitry Kerner (BGU)

will talk about

## Mommy, I can't solve this equation

Abstract: A signfiicant part of Mathematics boils down to "resolving systems of equations", e.g. equations of implicit function type, F(x,y)=0. In many cases one has to resolve these just "order-by-order". The obtained power series, y(x), do not need to be analytic.

Artin approximation (A.P.) ensures: every formal solution is approximated by analytic solutions. This goes in contrast to various other (functional or dfiferential) equations, for which the formal and analytic words are very dffierent.

I will give a brief introduction to this topic, and then explain the recent results: A.P. for (quivers) of morphisms of scheme-germs. In simple words: A.P. holds for an additional class of functional equations (not of implicit function type).