

Department of Mathematics, BGU

Colloquium

On Tuesday, January, 14 2020

At 14:30 – 15:30

In Math 101-

Michael Polyak (Technion)

will talk about

Enumerative geometry and Lie (super)algebras

Abstract: One of the classical enumerative problems in algebraic geometry is that of counting of complex or real rational curves through a collection of points in a toric variety.

We explain this counting procedure as a construction of certain cycles on moduli of rigid tropical curves. Cycles on these moduli turn out to be closely related to Lie algebras.

In particular, counting of both complex and real curves is related to the quantum torus Lie algebra. More complicated counting invariants (the so-called Gromov-Witten descendants) are similarly related to the super-Lie structure on the quantum torus.

[No preliminary knowledge of tropical geometry or the quantum torus algebra is expected.]