Department of Mathematics, BGU

Representation Theory

On *Thursday, January ,23 2020*

At *16:10 – 17:00*

In *58-201*

Eyal Subag (Penn State)

will talk about

The algebraic symmetry of the hydrogen atom

Abstract: The hydrogen atom system is a fundamental example of a quantum mechanical system. Symmetry plays the main role in our current understanding of the system. In this talk I will describe a new type of algebraic symmetry for the system. I will show that the collection of all regular solutions of the Schrödinger equation is an algebraic family of representations of dffierent algebras. Such a family is known as an algebraic family of Harish-Chandra modules. The algebraic family has a canonical filtration from which the physically relevant solutions and the spectrum of the Schrödinger operator can be recovered.

If time permits I will relate the spectral theory of the Schrödinger operator to the algebraic family. No prior knowledge about quantum mechanics or representation theory will be assumed.

Please Note the Unusual Day and Time!