Department of Mathematics, BGU

Colloquium

On *Tuesday, May ,3 2016*

At *14:30 – 15:30*

In *Math 101-*

Ronen Eldan (Weizmann)

will talk about

Interplays between stochastic calculus and geometric inequalities

Abstract: In this talk, we will try to illustrate the potential of stochastic calculus as a tool for proving inequalities with a geometric nature. We'll do so by focusing on the proofs of two new bounds related to the Gaussian Ornstein-Uhlenbeck convolution operator, which heavily rely on the use of Ito calculus. The first bound is a sharp robust estimate for the Gaussian noise stability inequality of C. Borell (which is, in turn, a generalization of the Gaussian isoperimetric inequality). The second bound concerns with the regularization of L_1 functions under the convolution operator, and provides an affirmative answer to a 1989 question of Talagrand. If time allows, we will also mention an application of these methods to concentration inequalities for log-concave measures.