Representation Theory, Geometry & Combinatorics Seminar

Organizer: Mark Haiman & Kolya Reshetikhin

Wednesday, 5:00–6:30pm (TIME CHANGE), 939 Evans

Oct. 10 **Yan Soibelman**, (Kansas State)

Donaldson-Thomas invariants for 3*-dimensional Calabi-Yau categories*

Donaldson-Thomas invariants should "count" the number of stable objects in a $3d$ triangulated Calabi-Yau category. This generalization of the traditional DT-inaviants which count ideal sheaves was suggested in our recent project joint with Maxim Kontsevich. Our approach is based on the new type of "wall-crossing formulas." Those formulas express the change of DT-invariants when crossing a certain real codimension one subvariety in the space of stability structures (in physics this subvariety is called a wall of marginal stability). The wall-crossing formulas follow from the "motivic" definition of DT-invariants. Also I plan to discuss their relationship with cluster transformations and the dilogarithm function.