Topology Seminar

Hiro Tanaka

of Harvard University will be speaking on

Bridgeland stability conditions, algebraic k theory, and factorization homology over the circle

on October 7 at 4:30 in
MIT Room 2-131

Consider any stable ∞-category $\mathcal{C}$: Examples include DbCoh(X), or the category of modules over some ring spectrum. We generalize the notion of a Bridgeland stability condition for a triangulated category to one for $\mathcal{C}$, and under some assumptions, the space of stability conditions is a complex manifold. For every stability condition σ, one can obtain a filtration on the algebraic K-theory of $\mathcal{C}$. These filtrations vary on the complex manifold only along real codimension 1 "walls" inside the complex manifold, and there should be a "wall-crossing formula" relating the E_2 pages of the spectral sequence associated to a filtration. I started looking into this because I wanted to encode Hall-algebra-like structures on the Ran space of the circle, so I will discuss that as motivation first.