

Fall 2022

Geometry and Topology Seminar

Title

*Tensor Triangular Geometry with Application on the
Category of Pseudo-coherent Complexes*

Speaker: Yufei Zhang, University of California Santa Cruz
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Time: 10:30PM
Tencent Meeting: 617-581-938, Password: 202211

Abstract: Tensor-triangulated categories appear across the board of pure mathematics, such as stable homotopy theory, algebraic geometry, modular representations, and motivic theory. We will take a tour of tensor-triangulated categories and tensor triangular geometry. We will start with two examples from stable homotopy theory and algebraic geometry to appreciate the triangular and symmetric monoidal (tensor) structures, respectively. For specific tensor-triangulated categories, by associating each of them with a spectral space (the Balmer spectrum), the so-called tt-classification and, further, tt-geometry will be introduced. To be more specific, there will be a classification theorem that establishes a one-one correspondence between a class of subcategories of the tensor-triangulated category and a class of subsets of its Balmer spectrum. Finally, we will discuss its application to the derived category of pseudo-coherent complexes over a commutative noetherian ring. We may also mention a more “visible” example from quiver representation theory.