

Northeastern University



Mathematics Department

Geometry, Physics, and Representation Theory Seminar

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Thursday, January 17, 2:50-3:50 pm, Lake Hall 509

## **Motivic Hilbert zeta functions of curves**

### **Abstract**

The Grothendieck ring of varieties is the target of a rich invariant associated to any algebraic variety which witnesses the interplay between geometric, topological and arithmetic properties of the variety. The motivic Hilbert zeta function is the generating series for classes in this ring associated to a certain compactification of the unordered configuration space, the Hilbert scheme of points, of a variety. In this talk I will discuss the behavior of the motivic Hilbert zeta function of a reduced curve with arbitrary singularities. For planar singularities, there is a large body of work detailing beautiful connections with enumerative geometry, representation theory and topology. I will discuss some possible extensions of this picture to non-planar curves.