

# Algebra/Topology Seminar

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## A COMPARISON FRAMEWORK FOR INTERLEAVED PERSISTENCE MODULES

Thursday, October 26, 2017  
1:15 p.m. in ES-143

ABSTRACT. In this talk, we'll first take a look at a recent result in the theory of persistent homology that can be used to rigorously track noise introduced during the computation of a barcode or persistence diagram. We'll then illustrate the use of this framework by looking closely at a number of examples, including common approximation techniques such as sub-sampling and discretization. In each case, we contrast this result with the typical formulation of uniform errors achieved in terms of the Bottleneck distance, which can be seen as a type of sup-norm on the space of persistence diagrams. We will also show how this framework can be used to address an open problem on non-uniform sub-level set filtrations.