

Applied Topology in Albany (ATiA) Seminar

TUNG LAM University at Albany SUNY

PRESENTATION-BASED METRICS FOR MERGE TREES

Friday, October 8th, 2021 2:00 p.m. on Zoom

ABSTRACT. In this talk, we introduce an ℓ^p -type distance on merge trees as an extension for the interleaving distance, adapting the definition in Bjerkevik and Lesnick's recent work for multiparameter persistence modules. We show this distance is a metric and upper-bounds the *p*-Wasserstein distance on barcodes of associated merge trees. Building on an idea of Skraba and Turner on Cellular Wasserstein stability, we show that our distance is stable and in fact, universal for $p \in [1, \infty]$. For the $p = \infty$ case, this gives a novel universality result for the interleaving distance on merge trees.

This is joint work with R. Cardona, J. Curry, and M. Lesnick.