

ALGEBRAIC DISTANCES FOR PERSISTENT HOMOLOGY

PETER BUBENIK

One of the main ideas in Topological Data Analysis is to convert application data into an algebraic object called a persistence module and to calculate distances between such modules. I will introduce these constructions and describe the main examples of such distances, called Wasserstein distances. The weakest of these distances, called the bottleneck distance, has previously been described algebraically (called interleaving distance). This has led to much useful theory and applications. I will give an algebraic description of all of the Wasserstein distances and discuss their generalizations.

(Peter Bubenik) UNIVERSITY FLORIDA