1145-55-796   **Joshua Cruz*** (`joshua.cruz@duke.edu`), Mathematics Department, Duke University, Box 90320, Durham, NC 27708-0320. *Cauchy Sequences in Categories with an Interleaving.*

In topological data science, categories with an interleaving functor have become ubiquitous, including examples like persistence modules, sheaves, and Reeb graphs. With the interleaving functor comes an interleaving distance, which (in theory) allows us to analyze our data using tools from probability and statistics. Many of these tools deal with convergence of sequences, so completeness of our metric space becomes important. This talk will explain a categorical condition which will guarantee completeness as well as describe the limit of a Cauchy sequence as the categorical limit of a specific diagram. (Received September 14, 2018)