1145-55-1526     **Chad Giusti\*** (`cgiusti@udel.edu`), Department of Mathematical Sciences, 501 Ewing Hall, University of Delaware, Newark, DE 19716. *Rational cochains on the space of persistence vineyards.* Preliminary report.

Applications of persistent homology to the study of dynamic systems or time series data sometimes produce sequences of persistence diagrams. These sequences are often encoded as so-called persistence vineyards, paths in the space of persistence diagrams. However, the complexity of persistence diagrams means understanding these objects is often just as difficult as characterizing the original system. Building on techniques from rational homotopy theory and classical cellular models for configuration spaces, we construct computable rational cochains on the space of persistence vineyards, and discuss their potential uses. (Received September 22, 2018)