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Radmila Sazdanovic* (rsazdanovic@math.ncsu.edu), Department of Mathematics, NC State, P.O. Box 8205, Raleigh, NC 27695, and **Michal Adamazsek, Henry Adams, Ellen Gasparovic, Maria Gommel, Emilie Purvine, Bei Wang, Yusu Wang and Lori Ziegelmeier.** *Homotopy types and persistence of metric gluings.*

Topological summary, information that one can capture using persistence, of metric wedge sums and gluings of metric spaces is the main topic of this talk. First, we provide a complete characterization of the persistence diagrams in dimension 1 for metric graphs under a particular intrinsic setting. Next we analyze two persistence-based distances defined for metric graphs and discuss progress toward establishing and comparing their discriminative capacities. In particular, we determine that the homotopy type of the Vietoris-Rips (resp., Cech) complex of a wedge sum, equipped with a natural metric, equals that of the wedge sum of the Vietoris-Rips (resp., Cech) complexes and discuss effect gluing metric spaces along a common isometric subset has on persistence. As a corollary, we obtain a complete description of the persistent homology of the Vietoris-Rips complexes for a wide class of metric graphs. (Received August 30, 2018)