1125-55-2901 **Jisu Kim*** (jisuk1@andrew.cmu.edu), Department of Statistics, Carnegie Mellon University, 5000 Forbes Ave, Baker Hall 132, Pittsburgh, PA. *Statistical Inference on Topological Data Analysis.* Preliminary report.

Persistent homology robustly extracts topological features from sampled manifolds and level sets of sampled functions. To estimate persistent homology and measure its randomness, a confidence set can be computed for the sampled persistent homology. Such confidence set is constructed by combining bootstrap from statistics and stability theorem from computational topology. From the confidence set, topological signal and topological noise can be separated from the persistent homology. (Received September 20, 2016)