

1125-55-2759 **Brittany Terese Fasy*** (soc-info@montana.edu), MSU GSoC, Bozeman, MT 59717.

Topological Descriptors. Preliminary report.

Over the past 20 years, topological data analysis (TDA) has developed as a field of mathematical research. Theoretical contributions have been made from researchers in mathematics, theoretical computer science, statistics, and machine learning. Other disciplines have started using techniques developed in TDA in order to have a new lens through which to view their data. In this talk, we will discuss some of the different topological descriptors that can be used to describe point clouds and images. We will also explain how these descriptors can be used for hypothesis testing, using an application in astronomy to motivate our discussion. (Received September 20, 2016)