

1135-00-33

Gunnar Carlsson* (carlsson@stanford.edu), Stanford University, Stanford, CA 94305.

Topological Modeling of Complex Data Preliminary report.

One of the fundamental problems faced by science and industry is that of making sense of large and complex data sets. To approach this problem, we need new organizing principles and modeling methodologies. One such approach is through topology, the mathematical study of shape. The shape of the data, suitably defined, is an important component of exploratory data analysis. In this talk, we will discuss the topological approach, with numerous examples, and consider some questions about how it will develop as mathematics. (Received June 22, 2017)