abstract

WORKSHOP ON TOPOLOGY: IDENTIFYING ORDER IN COMPLEX SYSTEMS
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

The ordinary homology of a subset S of Euclidean space depends only on its topology. By systematically organizing homology of neighborhoods of S, we get quantities that measure the shape of S, rather than just its topology. These quantities can be used to define a new notion of fractional dimension of S. They can also be effectively calculated on a computer.

We will illustrate this by presenting computations on sets S that are topologically trees (and therefore have trivial ordinary homology). Examples include branched polymers, diffusion limited aggregation, and self avoiding random walk.