

1158-51-330

**William Reimer\*** ([wreimer14@mail.fresnostate.edu](mailto:wreimer14@mail.fresnostate.edu)) and **Michael A Bishop**  
([mibishop@csufresno.edu](mailto:mibishop@csufresno.edu)). *An Introduction to Fractal Dimensions*. Preliminary report.

This talk will explore what fractals are as well as how they can be constructed. Fractals are sets without a well-defined integer-valued dimension and require generalized notions of dimension. We define the box counting dimension of a set and verify that this gives the usual integer dimension for familiar sets such as intervals and boxes. We then provide examples of iterated function systems which can be used to construct self-similar fractals. We will end by discussing different ways to generate fractals using code in Python by calling functions recursively. This is an undergraduate research project. (Received March 03, 2020)