Attractors: Dimension vs. Smoothness

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Various notions of dimensions are used on global attractors. I will discuss their relevance to infinite dimensional dynamical systems and some attempts to represent them as finite dimensional smooth dynamical systems. The quintessential example being the global attractor for the 2D Navier-Stokes equations with periodic boundary conditions. The talk will be elementary and expository.

The first part of the talk will be at a level that could be followed by students who took an undergraduate differential equations course.