Several interpretations of Cech (co)homology. Applications to dynamics.

David Jesús Nieves Rivera

Universidad Complutense de Madrid

Abstract

In this talk we are going to see some interpretations of Cech cohomology, some of an intrinsic character (that is, they do not depend on objects outside our space), and others not so much. Furthermore, we are going to define a bilinear form "integral" where in its first input admits a Cech cohomology class and in the other input admits a Cech homology class. We will see some properties of this integral, one of them similar to Stokes' theorem.

And finally, we will see some applications to dynamic systems, and a generalization of Manning's theorem. Remember that said theorem told us that the topological entropy of a continuous map f in a compact manifold is bounded below by the spectral radius of the induced map of f in singular homology at level 1.