Food For Thought

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Abstract:
A smooth manifold is a topological structure that admits some standard calculus constructions. A vector bundle over a manifold is a smooth choice of a vector space at every point of the manifold. One motivation for such an object is that the differential of a map between two manifolds is a map between their tangent bundles. At first glance, vector bundles seem as though they should be Cartesian products of the manifold with a vector space. In general, this is false, and certain “characteristic classes” are the explicit obstructions. In this talk, we will construct these classes and discuss some theorems explaining why they are of interest to many mathematicians.

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