Local multiplicity of continuous maps between manifolds

Pavle Blagojevic, Free University Berlin and Mathematical Institute SASA Belgrade

Let M and N be smooth (real or complex) manifolds, and let M be equipped with some Riemannian metric. A continuous map f from M to N admits a local k-multiplicity if, for every real number a, there exist k pairwise distinct points in M with diameter less then a, and whose f images coincide.
We present a systematic study of the existence of local k-multiplicities and derive criteria for their existence in terms of Stiefel-Whitney classes of an appropriate vector bundle.

(This lecture is based on the joint work with Roman Karasev, and joint work in progress with Fred Cohen, Michael Crabb, Wolfgang Luck and Gunter Ziegler)