

# Controlled topology and generalized manifolds

Friedrich HEGENBARTH

17.6.2015

## **Abstract**

Controlled topology has become an important tool in studying manifold-like spaces, for instance: Cell-like maps are controlled homotopy equivalences, and can be approximated by homeomorphisms in case of manifolds (Siebenmann's Approximation Theorem). Generalized  $n$ -manifolds (i.e. ANR spaces, having local homology of a  $n$ -manifold), are controlled Poincaré'-duality spaces.

Besides the fundamental concept, in the lecture will also be introduced a generalized homology theory (the  $L$ -homology Groups) which recently were used to calculate cell-like maps and controlled homotopy equivalences.