Oberseminar Topologie: 17.07.2017

Alessandro Sisto (ETH Zürich, Schweiz)

„Quasi-flats in hierarchically hyperbolic spaces.“

Abstract:
The notion of hierarchically hyperbolic space (HHS) provides a common framework to study mapping class groups, Teichmueller spaces with either the Teichmueller or the Weil-Petersson metric, CAT(0) cube complexes admitting a proper cocompact action, fundamental groups of non-geometric 3-manifolds, and other examples.

I will start with a gentle introduction to the geometry of HHSs, focusing on the mapping class group case.
I will then discuss the result that any top-dimensional quasi-flat in an HHS lies within finite Hausdorff distance from a finite union of "standard orthants", a result new for both mapping class groups and cube complexes. Also, I will discuss how this can be used to reduce proving quasi-isometric rigidity results to much more manageable, (mostly) combinatorial problems that require no knowledge about the geometry of HHSs. Joint work with Jason Behrstock and Mark Hagen.