18th NRW Topology Meeting – Bielefeld (Germany)

Saturday, November 17, 2012

10.30, Hörsaal 5

Andrew Stacey: (Trondheim) **"Higher order links (joint with Nils Baas and others)"**

This is a description of a new project whose goal is to study certain families of links which are obtained by iteration. Specifically, consider framed links in a torus. As these are framed, the components can be thought of as embeddings of a torus in itself. It is therefore possible to replace a component by another such link. This produces new links from old and provides a decomposition of a given link into layers that can be "seen" at different scales. The goal of the project is to study links formed in this way with the aim of using the layering to simplify the analysis of a given such link.

Starting with a small number of generators it is possible to produce families of such links and it is hoped that beginning with these families will provide enough examples to study this behaviour whilst remaining simple enough to work with.

Preliminary results show that many of the traditional knot and link invariants are not sensitive to this layering and therefore other tools will be needed in their study.

There are also connections to fields outside topology; there are ongoing projects to build some of the simpler examples of these links from DNA.

This talk will be accompanied by lots of pictures!