**Mathematisches Oberseminar** *PDG und Spektraltheorie* (WiSe 2013/14).

**Date:** 16.01.2014.
**Time and place:** 14:15 in B 134.

**Speaker:** Anna Dall'Acqua (Universität Ulm).
**Titel:** *Unstable Willmore surfaces.*
**Abstract:**
In the class of surfaces with fixed boundary, critical points of the Willmore functional are naturally found to be those solutions of the Euler-Lagrange equation where the mean curvature on the boundary vanishes. We consider the case of symmetric surfaces of revolution in the setting where there are two families of stable solutions given by the catenoids. In this talk we discuss a existence result on a third family of solutions which are unstable critical points of the Willmore functional, and which spatially lie between the upper and lower families of catenoids. Our method does not require any kind of smallness assumption, and allows us to derive some additional interesting qualitative properties of the solutions.

Thomas Østergaard Sørensen