

ANALYSIS SEMINAR

November 30, 2012

Speaker: Thomas Yu

Title: Willmore conjecture and the Canham–Helfrich Model.

Abstract: The Canham–Helfrich model is a widely accepted model for the modeling of cell membranes. A well-known application of this model is the explanation of the biconcave shape of a red blood cell. Related to this model is a deep geometric analysis problem known as the Willmore conjecture, which was claimed to be solved by Fernando C. Marques and André Neves in a Feb 2012 arXiv manuscript.

(See http://en.wikipedia.org/wiki/Willmore_conjecture).

In this talk, I will discuss some of the pure and applied aspects of this topic. I will also present some of our tenuous contributions on the numerical simulation of the Canham–Helfrich model.

Joint work with Jingmin Chen, Sara Grundel, Rob Kusner and Andrew Zigerelli.