A U S H A N G

FREIE UNIVERSITÄT BERLIN
Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Freitag, 23. Januar 2015, 14.00 Uhr

Ort: Arnimalle 3 / 3A, SR 130, Seminarraum (Hinterhaus)

Disputation über die Doktorarbeit von

Herrn Alexander Volkmann

Thema der Dissertation:
Free boundary problems governed by mean curvature

Thema der Disputation:
Embedded constant mean curvature tori in the threesphere

Die Arbeit wurde unter der Betreuung von **Prof. Dr. G. Huisken** durchgeführt.

Abstract: The study of minimal and constant mean curvature surfaces is one of the oldest subjects in differential geometry, and it remains still very active today. Whereas there are no closed minimal surfaces in euclidean space, and the only compact embedded constant mean curvature (CMC) surfaces in euclidean space are round spheres, the situation in other ambient spaces is quite different.
In the important case of the three-sphere, there exist embedded minimal surfaces of any given genus (Lawson 1970).
It has been known for some time that the only immersed CMC surfaces in the three-sphere of genus zero are the geodesic 2-spheres (Hopf 1951, Almgren 1966, Chern 1981).
In 1970, Lawson conjectured that every embedded minimal torus in the three-sphere is congruent to the Clifford torus. Pinkall and Sterling (in 1989) conjectured that every embedded CMC torus in the three-sphere is axially symmetric.
In a remarkable breakthrough, and building on earlier works of Andrews on non-collapsing in mean-convex mean curvature flow from 2011, Brendle succeeded to confirm Lawson's conjecture in 2012. Subsequently, and building on Brendle's result and results of Perdomo (2010), Andrews and Li where able to prove the conjecture of Pinkall and Sterling.

In my talk I will present the proof of the Pinkall-Sterling conjecture by Andrews and Li of 2012.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Der Vorsitzende der Promotionskommission
Prof. Dr. G. Huisken