COMPLEX ANALYSIS SEMINAR

STABLE CAPILLARY SURFACES WITH PLANAR OR SPHERICAL BOUNDARY IN THE ABSENCE OF GRAVITY

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ABSTRACT: In this talk, I will present the following result: the only immersed stable capillary surfaces with boundary embedded in a plane are the spherical caps. There is no gravity assumed so these surfaces will have constant mean curvature and will make a constant contact angle with the plane. The case when the genus of the surface is zero the result is basically known. For the positive genus case, a special perturbation is constructed and its normal component makes the second variation of energy negative, which means the configuration is unstable. If time permits, I will discuss our advances towards a similar problem where the surface "sits" inside of a sphere. I will at least explain the construction of the vector field that we are using in this case, which turns out to be Killing on the hyperbolic ball.

Date: Thursday, October 14, 2010

Time: 4pm-5pm

Place: UH 3800

Webpage: `http://math.utoledo.edu/~sonmez/complexseminar.html`