TEXAS STATE UNIVERSITY

The rising STAR *of Texas*

Discrete Mathematics Seminar

Time: Friday, October 7, 2016, 2:15-3:15 PM
Room: 237 Derrick Hall
Title: On the classification and asymptotic behavior of the symmetric capillary surfaces
Speaker: Dr. Raymond Treinen, Department of Mathematics

Abstract:

We consider the symmetric solutions to the Young-Laplace equation, and its extensions past vertical points. We provide a classification of all symmetric solutions using certain families of parameters. This classification produces a unified approach to fluid interfaces in capillary tubes, sessile and pendent drops, liquid bridges, as well as exterior and annular capillary surfaces. The generating curves for symmetric solutions have asymptotes for large arc lengths, and the behavior of these asymptotes is analyzed.