DIFFERENTIAL GEOMETRY/PDE SEMINAR

Wednesday, April 9, 2014
Padelford C-36
3:50PM–5PM

Stable Solutions to the Isoperimetric Problem in Gaussian Space

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The isoperimetric problem on gaussian weighted euclidean space involves minimizing a gaussian weighted perimeter over all regions of a fixed gaussian weighted volume. The weights for the area and the volume are the same, and so these quantities are not coming from a conformal change of the euclidean metric. We discuss smooth local minimizers to this problem.

These minimizers have prescribed mean curvature. We show that the only stable, complete, and smooth hyper-surfaces are hyper-planes. Furthermore, in the case of incomplete stable smooth hyper-surfaces contained in a ball, we obtain integral curvature decay estimates that depend on terms in the prescribed mean curvature and on the Euclidean volume growth. As the radius of the ball becomes larger, the estimates become smaller. For the case of two dimensional space, these estimates give point-wise decay estimates.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, `www.math.washington.edu`, follow the link **Seminars, Colloquia, and Conferences**).