



UNIVERSITY OF CALIFORNIA RIVERSIDE

DEPARTMENT OF MATHEMATICS

Colloquium

Dr. Regina Rotman
(University of Toronto)

“Geometry of 2-dimensional spheres”

Abstract:

I will discuss some geometric inequalities that are valid for Riemannian manifolds diffeomorphic to the sphere of dimension 2.

For example, consider the following basic question: Suppose a simple closed curve γ on a Riemannian sphere M of diameter D can be contracted to a point in M over simple closed curves of length at most L . Is there a homotopy over loops based at some point of γ that are short compared to L and D ? The answer to this question is positive. (Joint with G. Chambers.)

I will also prove that for any positive k and any two points of M there exist at least k geodesics connecting them of length at most $22kD$. (Joint with A. Nabutovsky.)

Wednesday, March 13th, 2013

Surge 284

Tea Time 3:40 p.m. – Talk Begins 4:10 p.m.