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Title: Classical Curvature Flows and Weingarten Surfaces

Abstract:

Classical curvature flows are time evolution equations for surfaces in Euclidean 3-space wherein the normal velocity of the evolving surface is a function of the surface's principal curvatures. Surfaces which are stationary under such evolution equations are exactly the surfaces whose principal curvatures are in functional relationship with one another. These surfaces are said to be Weingarten.

In this talk I will present some topological and geometrical obstructions for a surface to be Weingarten which allow one to deduce the non-existence of stationary solutions to particular curvature flows. Time permitting, I will discuss the analysis of a particular class of curvature flows linear-Hopf flow.