

Texas Tech University. Applied Mathematics Seminar.

# Geometric Output Regulation for Nonlinear Distributed Parameter Systems

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**ABSTRACT.** We consider the output regulation problem for a special class of nonlinear distributed parameter systems. The geometric approach is based on the center manifold theorem and as such gives a proof of the local solvability of a wide class tracking and disturbance rejection problems provided one can solve the so-called regulator equations. The regulator equations are a set of equations describing an error zero invariant manifold for the dynamics of the composite closed loop system consisting of the plant (to be controlled) and the exosystem. It is assumed that the neutrally stable exosystem generated both the signals to be tracked as well as the disturbances that need to be rejected.

The main goal of this talk is to describe a numerical procedure for the solution of the regulator equations resulting in a control law that solves the desired regulation problem. We will give a few examples as time permits.