1006-93-32   **David S Gilliam*** (`gilliam@math.ttu.edu`), Dept Math and Stat, P.O. Box 41042, Texas Tech University, Lubbock, TX 79409-1042, **Marinos Bagdati**, Dept Math and Stat, Texas Tech University, **Matthew Walker**, Dept Math and Stat, Texas Tech University, and **Victor Shubov**, Dept Math and Stat, Texas Tech University. *A Zero Dynamics Design Methodology for Regulation of a Class of Abstract Boundary Control Systems.*

In this work the authors describe a systematic methodology for solving certain problems of output regulation for a class of abstract boundary control systems using dynamic and static controllers. For the special systems considered in this work, the controllers are designed using controllers or static feedback derived from an associated zero dynamics system. The zero dynamics is obtained from the plant by constraining the error (the difference between the measured output and signal to be tracked) to be zero. Under our assumptions the proof of the main result is very simple. On the other hand, in applications this result is quite easy to apply and provides a very simple design procedure for a wide range of problems that can otherwise be difficult to solve. (Received January 14, 2005)