

1116-VC-2916      **Stanley R Huddy\*** (srh@fdu.edu), 1000 River Road, Teaneck, NJ 07512, and **Jie Sun**. *Master Stability Islands for Oscillation Death in Networks of Delay-Coupled Oscillators*.

Oscillation death (also called amplitude death) is a coupling induced stabilization of a fixed point of a dynamical system. This phenomenon has been shown to occur on networks of identical and/or nonidentical oscillators under various coupling schemes. An interesting result of oscillation death is the emergence of enclosed regions in delay and coupling space, called oscillation death islands, where the dynamics of the coupled system cease to oscillate when parameters values are chosen from within these regions. However, the size of these island regions depends on the network topology, so they must be computed separately for each network. In our work, we develop a master stability island approach to solve this issue. We compute islands that are independent of network topology and this allows us to determine the occurrence of oscillation death for any range of delay and coupling parameters. Examples of the master stability island approach using the Rossler system and Chen's system are also presented. (Received September 23, 2015)