

1010-93-45

Louis Tebou*, Department of Mathematics, Florida International University, 11200 SW 8th Street, Miami, FL 33199. *Stabilizability of a nonlinear coupled wave/heat system*. Preliminary report.

We consider a coupled system consisting of a semilinear wave equation and a linear heat equation in a bounded domain. First we show that an associated linear system is not exponentially stable. Then we establish an explicit polynomial decay rate for the energy of this linear system. Finally we introduce a locally distributed damping in the semilinear wave equation, and we show that the damped nonlinear system is exponentially stable. (Received August 09, 2005)