
EDUARDO CERPA, Universidad Técnica Federico Santa María

On the stability of some PDE-ODE systems involving the wave equation

Systems coupling an ordinary differential equation (ODE) with a wave through its boundary data are considered in this talk. The main focus is put on the role of different time scales on the stability of the coupled system. A fast wave equation coupled to a slow ODE is proven to be stable if each subsystem is stable. However, we show examples of stable subsystems generating an unstable full system when coupling a slow wave equation to a fast ODE. This is a joint work with Christophe Prieur (Grenoble, France).