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Title:

Revisit the damped wave equation on the torus

Abstract:

The damped wave equation is widely used to describe propagation phenomena for waves in viscoelastic materials where the energy is dissipated from some part the domain or some portion of the boundary. Determining the optimal energy decay rate is a classical problem in PDE and control theory. It turns out that the geometry of the underlying background and the damped region play crucial roles for the optimal decay rate. In this talk, I will show that, with convex-shaped damping, the optimal energy decay rate is better than strip-shaped damping.