

Hyperbolic equations with a nonlocal damping never decay fast - Asymptotic stability - Part I.

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The main goal of this talk is to present an in-depth discussion on hyperbolic equations subject to a dissipative effect introduced by Balakrishnan and Taylor called nonlocal dissipation, where this dissipation depends on the mechanical energy associated with the problem or depends only on one of the parts of the energy, the kinetic or the potential part. This type of dissipative effect has attracted the attention of researchers around the world due to the type of slow decay that this type of dissipation produces in the system. In this talk, we discuss several examples that involve not only frictional, viscous or viscoelastic structures but also combinations of these structures locally distributed with respect to the spatial variable that controls the dissipative effect together with the nonlocal structure mentioned above. Very little is known in the literature regarding this type of dissipative structure that combines the non-local effect of Balakrishnan-Taylor with locally distributed dissipative effects, whose investigation is the main objective of this talk.

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