

Stability Analysis of a Wave Equation with K-V Damping

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In this talk, we study a wave system with local Kelvin-Voigt damping. First, for the 1-d system, we prove the precise relationship between the polynomial decay rate and the power of the coefficient function near zero, which says that the energy decays faster when the coefficient function is more continuous near the interface. The method is based on the frequency analysis and several inequalities of Poincare's and Hardy's type. Further, we also analyze the stability of the higher dimensional wave equation with local K-V damping.