

Indirect stabilization of nonlinear coupled wave equations in the presence of time delay effects

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We consider a system of two wave equations with nonlinear source terms coupled through their velocities. One equation is damped, while the other experiences a pointwise time delay. By reformulating the problem in an abstract framework, we use semigroup theory and energy methods to establish well-posedness and derive conditions guaranteeing exponential energy decay for small initial data.

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