

# Exponential stability of semilinear damped wave equations with time-dependent time delay

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## Abstract

We analyze a class of semilinear damped wave-type equations with a delay feedback with time-variable time delay. By combining semigroup arguments, careful energy estimates, and an iterative approach we are able to prove, under suitable assumptions, a well-posedness result, and an exponential decay estimate for solutions corresponding to small initial data.