

Energy decay for strongly damped wave equations

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For wave equations with damping unbounded at infinity, essential spectrum may cover the whole negative semi-axis. One can thus not expect the semigroup norm to decay exponentially in time and a more delicate analysis needs to be performed. We derive bounds for the resolvent norm (between suitable spaces) along the imaginary axis and thereby obtain the corresponding polynomial decay rates of the semigroup. This generalises a result by R. Ikehata and H. Takeda which was obtained by a different approach based on PDE analysis methods.

Based on joint work with A. Arnal, J. Royer and P. Siegl.

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