Optimum Damping Design for an Abstract Wave Equation

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Abstract: In this paper we address the question of "optimal" damping design in an abstract setting and precisely define and analyze various design criteria which are of importance in applications. We formulate two abstract optimization problems and discuss the necessary optimality conditions for the problems. We will further illustrate our results in application to a one-dimensional damped wave equation, and will present numerical results for different damping designs for this example.