



# Reinhard Racke

## Exponential Stability for Wave Equations with Indefinite (Non-Dissipative) Damping

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We consider the non-linear wave equation  
 $\square u = a(x)u$ , where the function  $a$  is allowed to change sign, but has to satisfy  
 $\int_{\Omega} a(x) dx < 0$ . New conditions are presented for this non-dissipative situation with  
indefinite damping term, under which the linearized system is  
exponentially stable, and the nonlinear system is globally well-posed in  
the small.

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