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Grozdena Todorova (todorova@math.utk.edu) and **Borislav Yordanov***
(yordanov@math.utk.edu). *The energy decay problem for wave equations with nonlinear
dissipative terms in R^n .*

We study the asymptotic behavior of energy for wave equations with nonlinear damping $u_{tt} - \Delta u + |u_t|^{m-1}u_t = 0$ in R^n as $t \rightarrow \infty$. The main assumptions are $n \geq 3$ and $1 < m < (n+2)/(n+1)$. We show that the energy goes to zero like a negative power t^{-d} , where the exponent d is determined by m and n . (Received August 19, 2005)