

Haraux, Alain; Jendoubi, Mohamed Ali

Convergence of bounded weak solutions of the wave equation with dissipation and analytic nonlinearity. (English) [Zbl 0939.35122](#)

Calc. Var. Partial Differ. Equ. 9, No. 2, 95-124 (1999).

The paper deals with the initial boundary value problem for the equation $u_{tt} + cu_t = \Delta u + f(x, u)$ in $\mathbb{R} \times \Omega$, where Ω is a bounded smooth domain in \mathbb{R}^N , c is a positive constant, and f is an analytic (in u) function satisfying some growth conditions. The authors prove, that if the trajectory of a solution u is bounded in $H_1^0(\Omega) \times L^2(\Omega)$, then u converges to a solution of the appropriate stationary problem. Some examples and some more general variants of the result are also given.

Reviewer: Marie Kopáčková (Praha)

MSC:

[35L70](#) Second-order nonlinear hyperbolic equations

[35B40](#) Asymptotic behavior of solutions to PDEs

[35L20](#) Initial-boundary value problems for second-order hyperbolic equations

Cited in **2** Reviews
Cited in **47** Documents

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[nonlinear wave equation with dissipation; compactness; boundedness](#)

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