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NONEXISTENCE OF GLOBAL SOLUTIONS OF A QUASILINEAR HYPERBOLIC EQUATION

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Abstract. In this work, the nonexistence of the global solutions to a class of initial boundary value problems with dissipative terms in the boundary conditions is considered for a quasilinear hyperbolic equation. The nonexistence proof is achieved by the use of a lemma due to O. Ladyzhenskaya and V. K. Kalantarov and by the usage of the so called concavity method. In this method one writes down a functional which reflects the properties of dissipative boundary conditions and represents the norm of the solution in some sense, then proves that this functional satisfies the hypotheses of Ladyzhenskaya-Kalantarov lemma. Hence from the conclusion of the lemma one concludes that in finite time t_2, this functional and hence the norm of the solution blows up.

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