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GLOBAL SOLVABILITY AND THE BEHAVIOR OF  
SOLUTIONS FOR CAUCHY PROBLEM FOR  
SYSTEMS OF THREE SEMILINEAR HYPERBOLIC  
EQUATIONS WITH DISSIPATION

**Abstract**

*In this paper we study the global solvability and behavior of the solutions for the Cauchy problem for systems of three semilinear dissipative equations with the nonlinear parts consisting of the sums of functions of two variables. We find conditions when the nonlinear part ensures the existence of global solutions. We also investigate the matter of absence of global solutions for systems of three hyperbolic inequalities. From this, in particular, it follows that the conditions imposed on the growth of the nonlinear part in the theorem on the existence of global solutions are essential.*