On critical exponents for weak solutions to the Cauchy problem for one nonlinear equation with gradient non-linearity

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November 16, 2020

Abstract

In this paper, we consider the Cauchy problem for one nonclassical, third-order, partial differential equation with gradient non-linearity $|\nabla u(x,t)|^q$. The solution to this problem is understood in a weak sense. We show that for $1 "3/2$ the existence of the only local-in-time weak solution of Cauchy's problem.If $3/2$"

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