Global existence and nonexistence of strong solutions to pseudo-parabolic equations with variable exponents

Le Nhan[1] and Truong Le[2]

[1]Ho Chi Minh City University of Technology and Education
[2]University of Economics Ho Chinh Minh City

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Abstract

This paper deals with a pseudo-parabolic equation involving variable exponents under Dirichlet boundary value condition. The authors first develop the potential well method to prove a threshold result on the existence and nonexistence of global solutions to the equations when initial energy is less than the mountain pass level d. By borrowing the idea from (missing citation); (missing citation) we also show some existence and nonexistence results with high energy initial data. In this case a new characterization for nonexistence of solution is given. These results extend and improve a recent result obtained by Di et al. (2017) (missing citation) and Liao (2019) (missing citation); (missing citation).

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References