



A Fredholm Operator and Solution Sets to Evolution Systems

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Abstract: In this paper we deal with the Peano phenomenon for general initial boundary-value problems of quasilinear evolution systems with arbitrary even order space derivatives. The nonlinearity is a continuous or continuously Frechét differentiable function. Qualitative and quantitative structure of solution sets is studied by the theory of proper, Fredholm and Nemitskiĭ operators. These results can be applied to the different technical and natural science models.

Keywords: *Evolution systems; an initial boundary-value problem; a linear Fredholm operator; a proper and coercive operator; a bifurcation point; a surjectivity.*

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