

Lee, John W.; O'Regan, Donal

Existence results for differential equations in Banach spaces. (English) Zbl 0786.34069
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This article is devoted to some generalizations of classical existence results for finite systems of ordinary differential equations onto ordinary differential equations in Banach spaces. The Cauchy problem and two-point boundary-value problem are considered; in this connection the condition of compactness of the corresponding integral operator is supposed and namely this fact allows to use usual 'finite-dimensional' ideas and methods in this field; one can notice that this condition is difficult to understand and usually is true only when the right hand side of the equation considered is a completely continuous function.

Reviewer: [P.Zabrejko \(Minsk\)](#)

MSC:

- [34G20](#) Nonlinear differential equations in abstract spaces
- [34B15](#) Nonlinear boundary value problems for ordinary differential equations
- [34A12](#) Initial value problems, existence, uniqueness, continuous dependence and continuation of solutions to ordinary differential equations
- [34G10](#) Linear differential equations in abstract spaces

Cited in **5** Documents

Keywords:

[existence](#); [ordinary differential equations in Banach spaces](#); [Cauchy problem](#); [two-point boundary-value problem](#); [compactness](#)

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