LOCALIZATION RESULTS VIA KRASNOSELSKII’S FIXED POINT THEOREM IN CONES

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Abstract. The purpose of this paper is to give an existence result for the nonlinear fourth-order boundary value problem

\[ u^{(4)}(t) = f(u(t)), \quad t \in [0, 1] \]
\[ u(0) = u(1) = A, \]
\[ u''(0) = u''(1) = B \]

where \( f : [0, \infty) \rightarrow \mathbb{R} \) is continuous and \( A, B \) are positive real numbers. We use a result related to the existence of positive solutions for nonlinear integral equations in Banach spaces, presented in [7].

Key Words and Phrases: ordered Banach space, fourth-order boundary value problem, Krasnosel’skii’s compression-expansion fixed point theorem.

2000 Mathematics Subject Classification: 34B18, 45N05, 47H10.

References


Received: January 26, 2005; Accepted: August 16, 2006.