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两端简单支撑的不连续梁方程的可解性

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Solvability of Discontinuous Beam Equations Simply Supported at Both Ends

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- 摘要
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摘要 研究一个四阶两点边值问题解的存在性,其中非线性项是Caratheodory函数并且包含了未知函数的各阶导数.在力学上,此问题表述了两端简单支撑的弹性梁的挠曲.

关键词:　奇异常微分方程　边值问题　存在性　不动点定理

Abstract:　The existence of solution for a fourth-order two-point boundary value problem is studied,where the nonlinear term is a Carathéodory function and contains all lower order derivatives of the unknown function.In mechanics,the problem describes the deflection of an elastic beam simply supported at both ends.

Key words:　singular ordinary differential equation　boundary value problem　existence　fixed point theorem

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