POSITIVE SOLUTIONS FOR A SINGULAR THIRD ORDER BOUNDARY VALUE PROBLEM

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Abstract. The existence of positive solutions is shown for the third order boundary value problem, \( u''' = f(x,u), 0 < x < 1 \), \( u(0) = u(1) = u''(1) = 0 \), where \( f(x,y) \) is singular at \( x = 0 \), \( x = 1 \), \( y = 0 \), and may be singular at \( y = \infty \). The method involves application of a fixed point theorem for operators that are decreasing with respect to a cone.


Keywords and phrases: fixed point theorem; boundary value problem, singular.

REFERENCES