

TYPES AND MULTIPLICITY OF SOLUTIONS TO STURM–LIOUVILLE BOUNDARY VALUE PROBLEM

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We consider the Sturm–Liouville boundary value problem

$$\begin{aligned}x'' &= f(t, x, x'), \quad f \in C^1([a, b] \times \mathbb{R} \times \mathbb{R}, \mathbb{R}), \\a_1 x(a) - a_2 x'(a) &= A, \\b_1 x(b) + b_2 x'(b) &= B.\end{aligned}\tag{1}$$

We define types of solutions and show that if there exist solutions of different types then there exist solutions of intermediate types also.

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