

**APPROXIMATION OF THE SET OF TRAJECTORIES OF A CONTROL SYSTEM DESCRIBED BY THE URYSOHN INTEGRAL EQUATION**

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The approximation of the set of trajectories of a control system described by the Urysohn integral equation is considered. The closed ball of the space  $L_p([a, b]; \mathbb{R}^m)$  ( $p > 1$ ) of radius  $r$  centered at the origin is chosen as the set of admissible controls. This set is replaced by a set of control functions, which consists of a finite number of controls and generates a finite number of trajectories. An accuracy estimate is obtained for the Hausdorff distance between the set of trajectories and the set consisting of a finite number of trajectories.

Keywords: Urysohn integral equation, control system, integral constraint, set of trajectories, approximation.

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