

STUDIES OF EFFECTS OF VARIATIONS IN PARAMETERS OF CONTROLLED ROCKET OBJECT ON FLYING RANGE

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The problem of the study of the parametric sensitivity of the target-oriented functional – the flight distance – as one of the efficiency factors of the controlled rocket to the deviation of the design and trajectory parameters, the certain requirements of tactical and technical specifications and the design factors (hereafter referred to as “the investigated parameters”) from their nominal values is formulated. Studies have been made, and the effects of variations in the investigated parameters on the target-oriented functional have been evaluated. The ranges in which these variations do not exert a considerable influence on the efficiency of the target-oriented task realization have been determined. The proposed classification of the investigated parameters according to the extent of their influence on the target-oriented functional can develop the requirements for an accuracy of these parameters using a concrete example of the controlled rocket object. The developed method of the assessment of the parametric sensitivity can be used to develop the efficient methods of the optimization applicable to the initial design of products of rocket and space technology.

Keywords: *controlled rocket object, cruise solid rocket engine, initial design, design parameters, parametric sensitivity of target-oriented functional, variations in parameters, permissible ranges of variations in parameters under study.*

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