

ANALYTICAL APPROXIMATION OF AIRCRAFT DYNAMICS MODEL IN PROBLEMS OF APPROXIMATE OPTIMAL CONTROL SYNTHESIS

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An approximate approach to investigating optimal control of an aircraft as a complex object having no complete analytical description is developed. Approximation of practical models (including simulation ones) of the object by analytical designs of various complexity and accuracy for the search of an approximate global solution with consequent iterative refinement on their basis is proposed. The study of helicopter emergency landing manoeuvre is considered as an example. Description of a software complex of refinement and optimization of control laws including the approximation algorithms is given.

Optimal control, analytical approximation, method of least squares, aircraft.

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