
Use of simulation modeling methods in problems of studying the near-Earth spacecraft motion

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The paper presents the concept of creating a simulating and modeling complex and studies the structure of the algorithmic software. In the research we examine the interaction of the main elements of the complex. The modeling complex is designed for carrying out and processing the measurement sessions during the spacecraft orbital motion, as well as working out methods for determination and assessment of the vector of the spacecraft state according to the observations of its orbital motion using the distorted information. Moreover, we specified the model parameters according to the results of observations from the ground-based measuring stations. The concept of the modeling and simulating complex under consideration gives an insight into the work of its main subsystems and allows us to improve the algorithms of the individual elements and the whole system as well.

Keywords: *spacecraft, simulation modeling, modeling complex, the prognosis of orbital motion, measurement processing of current navigation parameters.*

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