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DYNAMIC ANALYSIS OF MECHANICAL MOTION OF A VARIABLE-MASS ROCKET SYSTEM

Abstract

In practice, variable-mass propulsion mechanical systems are widely used. Examples of such systems include carrier-transporters, jets, and various rocket systems. In jet rocket systems, the process of combustion of motor fuel and the separation of various parts from the main body, depending on the time, lead to a change in its mass and, as a result, to the occurrence of impact force. It is necessary to take into account the actual calculation of air resistance, mechanical movement of the rocket engine mechanism and energy losses in kinematic pairs near the surface of the Earth. It is also important to consider the Coriolis inertia forces (Coriolis effect) in the Caucasus region, during the Earth's complex motion.