ASSESSING WEIGHT EFFICIENCY OF CARRIER ROCKETS LAUNCHED FROM DIRIGIBLES AND AIRPLANES

Samara State Aerospace University

A method of comparative analysis of weight efficiency of carrier rocket launches from the Earth's surface, dirigibles, subsonic, supersonic and hypersonic airplanes is proposed. The method is based on assessing the savings in the required characteristic velocity of carrier rockets launched from dirigibles and airplanes as compared to ground launches and determining the minimal launching mass of the rocket by optimal mass redistribution among the rocket units. The method can be used at the initial stages of design.

Carrier rocket, payload, launching mass, dirigible, airplane, characteristic velocity, mass optimization, rocket units.

Kurenkov Vladimir Ivanovitch, doctor of technical sciences, professor, professor of aircraft design department, Samara State Aerospace University, e-mail: kvi.48@mail.ru. Area of research: methods of designing space vehicles and carrier rockets.