

CHOOSING THE FORM OF SPACE VEHICLE DESIGNED FOR DESCENT IN THE RAREFIED ATMOSPHERE OF MARS

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The paper deals with choosing the form and centre of inertia position of a space vehicle with a view to eliminating resonance which occurs during unguided descent in the rarefied atmosphere of Mars. Blunted small-elongation space vehicles consisting of a conical part and a spherical one are discussed. The criterion of absence of resonance is obtained analytically with the help of Newton's shock theory. Practical recommendations on choosing the form of a space vehicle are given to eliminate the possibility of resonance arising.

Unguided motion, descent, space vehicle, biharmonic moment characteristic, angle of attack, Newton's method.

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