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Author: Mrs. LIU MIN
China Academy of Space Technology (CAST), China, lmsuccess_cast@163.com

Prof. chuanfeng wei
Institute of Manned Space System Engineering, China Academy of Space Technology (CAST), China,
chfwei@163.com

THE SENSITIVITY ANALYSIS FOR SYSTEM DESIGN PARAMETERS EFFECT ON RETURN
CAPSULE LANDING ATTITUDE

Abstract

The landing velocity and the landing angle of return capsule are the principal factors which affect on landing safety but the design parameters of parachute-capsule system, such as drag coefficient of parachute and centroid of return capsule are also the important factors which affect on landing velocity and the landing angle, so controlling the design parameters deviation of parachute-capsule system strictly has the significance for return capsule holding good landing attitude. In fact, the deviation of different system design parameters has different effect on landing velocity and the landing angle. The paper leads into sensitivity analysis tool, investigates and calculates preliminary aimed at the different system design parameter effect on return capsule landing velocity and landing angle simultaneously, and gets the correlation sensitivity which affects on landing velocity and the landing angle of return capsule by different system design parameters, the calculation result can provide certain reference for parachute-capsule system design.