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STUDY ON BALLISTIC RECOVERY SOLUTION OF GRAVITY-2(YL-2) LAUNCH VEHICLE

Abstract

The reusability is an important development direction for new launch vehicle. The majority of space agencies and commercial companies are currently engaged in the development of reusable launch vehicles to enhance the economy and competitiveness of their vehicle. The Gravity-2(Yinli-2, YL-2) is a large reusable launch vehicle with a two-stage configuration. It uses liquid oxygen and kerosene propellants. The YL-2 will strive to establish itself as a prominent contender in the global commercial space market and serve as a viable platform for human space exploration. The maiden flight of YL-2 will be launched at the end of the year 2025. In this paper, the recovery ballistic profile of the 1st stage of YL-2 for both sea and land is introduced, dynamic computational model is constructed, recovery efficiency and multi-mission adaptability of the vehicle are analyzed. Furthermore, the feasibility of 2nd stage recovery is discussed and analyzed.