

Poster Session (P)

Poster Lunch (1)

Author: Mr. Xiangyang Hou

China Academy of Space Technology (CAST), China, 13683344423@163.com

Dr. Peng Zhang

Institute of Manned Space System Engineering, China Academy of Space Technology (CAST), China,
zhangpeng01061014@163.com

Mr. Mingyou Shang

CAST, China, shangmingyou@163.com

Mr. Lianghao Bai

Institute of Manned Space System Engineering, China Academy of Space Technology (CAST), China,
blh36235001@sina.com

RESEARCH AND APPLICATION FOR NEW DEPLOYABLE RE-ENTRY AND ENTRY TECHNOLOGY

Abstract

The new deployable re-entry and entry technology, with its unique structure, has the advantages of less constraint of rocket envelope, higher efficiency of transportation, better deceleration effect, lower overload and heat flux density, stronger function expansion, and is able to adapt to future space development trends. Firstly, through the aspects of structure and key technologies, this paper analyzes and compares the characteristics of the three new deployable re-entry and entry technologies including flexible inflatable, semi-rigid mechanical and rigid mechanical deployable. Secondly, this paper systematically summarizes advantages and disadvantages of these three new deployable re-entry and entry technologies and their application. Lastly, this paper presents the application conception of the new deployable re-entry and entry technology in the field of returnable satellite and manned space flight. The research contents and conclusions provide the reference for choosing the development direction and achieving engineering applications of the deployable re-entry and entry technologies.