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Impact Response of Laminate Metal Honeycomb Sandwich Structure XIAODONG HE, XIANGHAO KONG, LIPING SHI, School of Astronaunts, Harbin Institute of Technology, R.P. China, 150080, SCHOOL OF ASTRONAUNTS, HARBIN INSTITUTE OF TECHONLOGY TEAM — The ARMOR TPS is one of important candidate structure of RLV. It will be the best selection for all kinds of RLV. So the ARMOR thermal protection system will be used in aviation and spaceflight field more and more widely. ARMOR TPS panel is above the whole ARMOR TPS, and the metal honeycomb sandwich structure is the surface of the ARMOR TPS panel. So the metal honeycomb sandwich structure plays an important role in the ARMOR TPS, while it bears the flight dynamic pressure and stands against the flight dynamic calefaction and impact load. The metal honeycomb sandwich structure is made of upper faceplate, lower faceplate and honeycomb core. In the course of the reusable launch vehicle working, it is possible that the space chips impact its outer surface. The main problem is what impact the metal honeycomb sandwich structure can stand and how many times it can stand. In the high speed impact experiment we choose different quality and velocity to simulate real space environment. This paper will analyze the mechanics behaviour of metal honeycomb sandwich structure in the course of impact, then we make sure the limit impact load and get the effect of impact flaw.

Xianghao Kong
School of Astronaunts, Harbin Institute of Technology, R.P.China, 150080

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