

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Future Space Transportation Systems Technologies (5)

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PROGNOSTICS AND HEALTH MANAGEMENT TECHNOLOGY OF LARGE LAUNCH VEHICLE

Abstract

Prognostics and Health Management (PHM) system is the core technology of forecast and synthetic layout aiming at hidden trouble and failure. A PHM frame of the large Launch Vehicle is designed in this paper. PHM database, PHM method and application, and PHM flow are investigated. The key technology is given and analyzed. This technology can be applied to evaluate flight condition of Launch Vehicle structure, forecast residual life of Launch Vehicle structure, and diagnose the fault on Launch Vehicle structure. Tactic and decision to maintenance and safeguard are also made according to the available resource and the requirement. This study can support PHM application on the large Launch Vehicle.