

MATERIALS AND STRUCTURES SYMPOSIUM (C2)
Space Structures - Dynamics and Microdynamics (3)

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INVESTIGATIONS ON REPRESENTATION OF THE INTERFACE BOUNDARY CONDITIONS OF
AN EARTH OBSERVATION SATELLITE

Abstract

A good representation of the interface boundary conditions for structural test and analysis activities is required to obtain accurate results. In general, interface boundary condition of a satellite structure is assumed as rigidly fixed during sine vibration and modal analysis. However, during analyse and test activities of satellite structural subsystem development project performed by TAI, it has observed experimentally that the representation of the clamp band system has considerable effect to dynamic behaviour of the satellite structure. In this study, the effects of satellite interface representation to analyse and test results are investigated. The results of Qualification Model Test Campaign (without clamp band) and Flight Model Test Campaign (with clamp band) which have different boundary conditions are compared. The differences between the test results are represented and explained with use of finite element analyses. The finite element models prepared to represent the different interface conditions are introduced. As the result of the study, the outcomes of the FE analysis are discussed.