

15th Aerospace Testing Seminar
October 11-13,1994

Call for Paper Response

VAPEPS Management Center

by Juan I'. Fernández

Jet Propulsion Laboratory
California Institute of Technology

Abstract

A VAPEPS(VibroAcoustic Payload Environment Prediction System) Management Center is established and being maintained at the Jet Propulsion Laboratory. VAPEPS is a computer program that utilizes statistical energy analysis (SEA) theory and SEA extrapolation methods to predict the vibroacoustic environments in complex systems. The program is commonly utilized to establish random vibration and acoustic test requirements for aerospace components exposed to launch environments. It can also be used in the payload or launch vehicle design process for control or mitigation of the launch or on-orbit vibration and acoustic environments, as well as to calculate acoustically induced stresses in structures such as solar panels and reflectors. This paper briefly summarizes the VAPEPS program capabilities and presents results of its application to the prediction of the vibroacoustic response of spacecraft solar panels.