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Abstract :

This report presents the results of an experimental programme for the testing of aeroelastically scaled models of the Polar Satellite Launch Vehicle (PSLV). It presents briefly the model design, analysis and fabrication aspects and discusses in detail the instrumentation scheme, ground static and dynamic test results, wind tunnel testing and data reduction. The results are presented in terms of rms dynamic bending moment distribution along the length of the vehicle for various Mach numbers and angles of attack. The corresponding values of the steady loads experienced by the model during the tests are also presented. The studies have been conducted in the pitch plane and the yaw plane on the model with all external protrusions, and also on the clean model (i.e. without protrusions) and and 11 degree nose cone configuration.