

CFD SIMULATION OF WIND TUNNEL TEST OF STAGE SEPARATION FOR A TYPICAL LAUNCH VEHICLE

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Abstract

A study has been carried out to understand the flow-field around a separating spent stage during first stage separation of a typical launch vehicle. A CFD simulation has been performed to characterize the flow behavior and the axial force acting on the separating stage. Results from CFD simulations are compared with the wind tunnel experiments, which show good accordance in terms of flow features and separating force acting on the spent stage.

Keywords: Hot Stage Separation, Launch Vehicle, Reverse Flow, CFD, PARAS-3D