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(57) Abstract :
Concept of Altitude adaptive rocket nozzles recently received greater importance and interest in the space explorations and other such applications in space and rocket technology. The operations reliability of rocket launcher and the earth to orbit rocket launch are the crucial for the space transportation in the future. In the recent progress of the combustion expansion system the rocket nozzles are greatly revised from both application and design perspectives. One of such development is the dual bell nozzle. The work indicates that the research on the concept of dual bell nozzle is tardy and there is no much progress from the inception of the idea. The specific application purpose designs are tested experimentally and implemented but the large scale development can only be possible if the generalized design parameters can be suggested. In the present work one of such nozzle is selected and studied using computational fluid dynamics (CFD) and the results are synthesized for bench marking the general approach to study the Dual Bell nozzles. The result shows the variation in the Mach number, pressure, temperature distribution and turbulence intensity.

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