https://doi.org/10.69646/1csst30

WIND TUNNEL STUDY OF SIDE JET TECHNOLOGY: IMPLICATIONS FOR REENTRY BODY CONTROL

ISIDORA STANKOVIĆ[1]*, BOŽIDAR SIMOVIĆ[1], BILJANA ILIĆ[1], MARIJA SAMARDŽIĆ[1], GORAN OCOKOLJIĆ[1]

[1] Military Technical Institute (VTI), Experimental Aerodynamics Division, Ratka Resanovića 1, Belgrade, Serbia
**Corresponding author email address: stank.151dora@gmail.com*

ABSTRACT

This paper presents experimental results of side jet reaction control system applied to generic missile model in the VTI T-38 wind tunnel.

The obtained results provide insight into the interaction between jetinduced forces and the surrounding flow field, with focus on the measurement of the changes in normal force caused by side jet effect. Aerodynamic forces on the generic missile model were measured for two different jet speeds obtained by interchangeable Mach 1 and Mach 4 nozzles. Comparative analysis of their influence is presented, emphasizing the potential applicability of such control mechanisms in reentry body technologies.

The results contribute to a better understanding of side jet phenomena in high speed regimes.