Evaluation of Orbiter Performance and Nose Heating at Mach 3.8

February 25, 2020

1 Introduction

blah blah

2 Methodology

2.1 Shots of the Orbiter grid

four

2.2 Fluent setup

cell count and normal-to-wall spacing(s) used, min/max included angles, list boundary conditions, list reference values, list submodels chosen (i.e., viscous model selected), and provide numerical scheme and spatial accuracy used.

3 Results

3.1 Proof of convergence history

3.2 Table of final lift and drag coefficients and related forces

3.3 Plot of lift and drag and L/D vs. AOA with peak L/D identified

3.4 Pressure and temperature contours with streamlines

3.5 Results of grid adaptation

3.5.1 Side by side of contour plots

3.5.2 Side by side of mesh

3.5.3 Table of force coefficients

3.5.4 Fluent settings used to adapt grid

Appendix