

DSG Ansys R&D Meeting Minutes

Date: December 7, 2023

Time: 2:00 PM – 2:30 PM

Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, George Jacobs, Tyler Lemon, and Marc McMullen

1. NPS thermal analysis with Ansys Mechanical and Fluent in transient mode

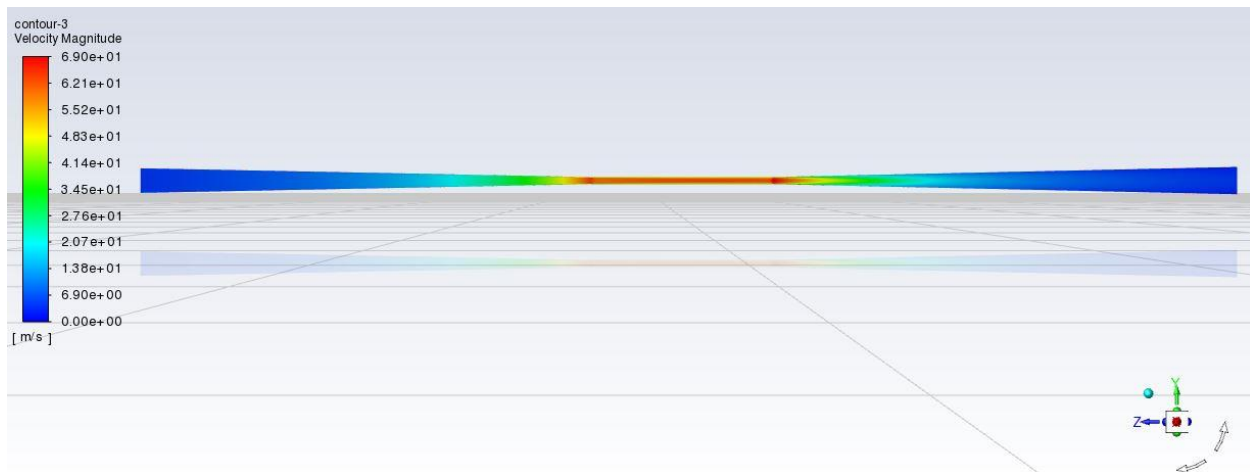
Pablo Campero

1. Common model to be used in both thermal analyses is completed
 - Applied Share Topology command to ensure contact between the generated 1080 new slice volumes and the mu-metal dividers
 - Inspected geometry and location of each component
 - Completed check for any potential interference of parts
 - Will generate backup copy and proceed with mesh

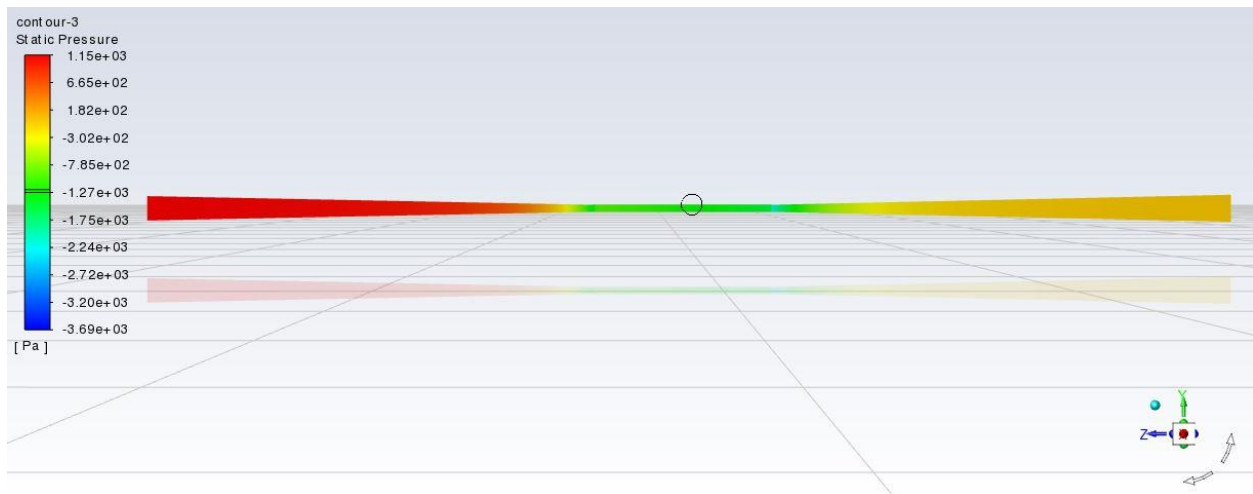
2. EIC beampipe Ansys Fluent thermal analysis

Pablo Campero

1. From the simulation results, measured temperature, velocity, and pressure along the beampipe
 - Generated contour plots and placed probes at the central section of the beryllium pipe
 - Noted a maximum temperature of 93.12°C
 - A high speed and low pressure were noted in the central section, as expected due to the venturi effect



Right side, cross-section of the velocity contour for the beampipe



Right side, cross-section of the pressure contour for the beampipe