

DSG Ansys R&D Meeting

Date: February 16, 2023

Time: 2:00 PM – 3:00 PM

Attendees: Aaron Brown, Pablo Campero, Brian Eng, Marc McMullen, and Tyler Lemon

1. Discussed simulation of NPS crystal array cooling

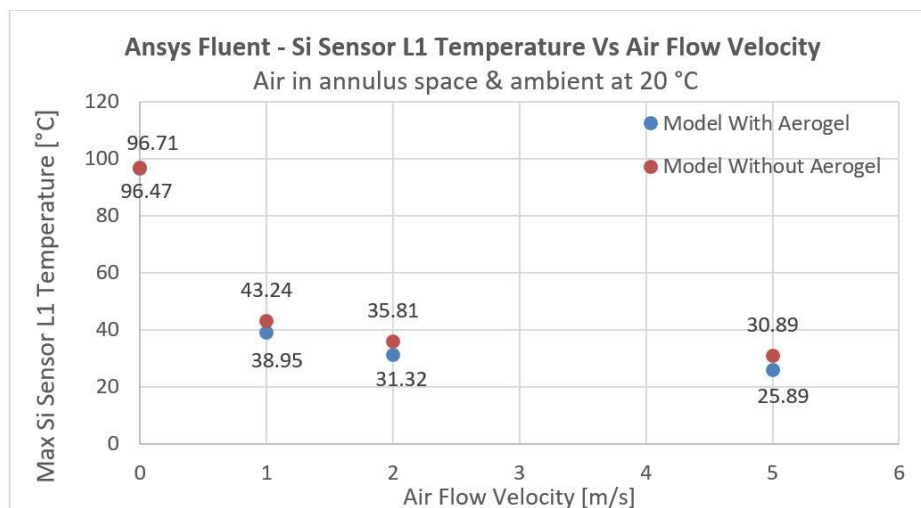
1. Overlapping components in model corrected in SpaceClaim, but Ansys still returns an error when attempting to import model into Fluent.
2. Debugging in process.

2. Discussed simulation results when using different properties for the aerogel insulation for EIC beam pipe thermal simulation

1. Changed with density from 50 kg/m^3 to 250 kg/m^3
 - No effect
2. Changed thermal conductivity value to 0.0156
 - Silicon sensor layer 1 temperature increased by 1°C

3. EIC beam pipe simulation results at various air flow velocities of 0.001 m/s, 1 m/s, 2 m/s, and 5 m/s

1. Used model with 5-mm separation between beryllium beam pipe first layer of silicon sensors
2. There is $\sim 5^\circ\text{C}$ difference between results with and without aerogel



Temperature vs. air flow velocity with and without aerogel.