

DSG Ansys R&D Meeting

Date: February 9, 2023

Time: 2:00 PM – 3:00 PM

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

1. Discussed parameters used for latest simulation of EIC beryllium beam pipe section heating

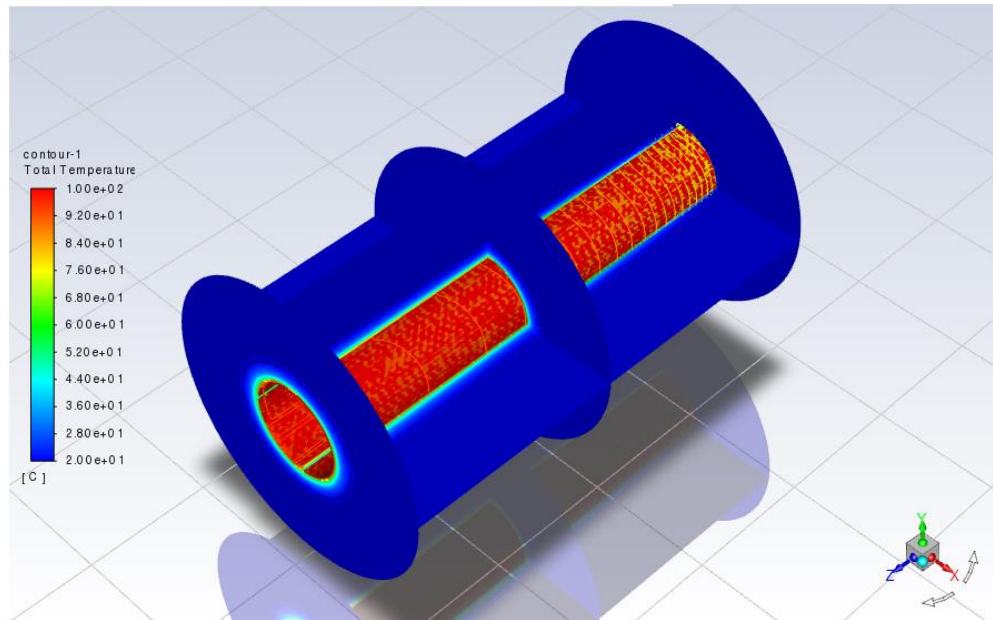
1. Beam pipe temperature set to 100°C
2. Air temperature for enclosure and annulus space set to 20°C
3. Air inlet velocities used for enclosure and annulus were 0.001 m/s and 1 m/s
4. Iterated simulation 100 times

2. Results of beam pipe simulation with 0.001 m/s air flow velocity

1. Maximum temperature of silicon layer is 98.35°C

3. Results of beam pipe simulation with 1 m/s air flow velocity

1. Maximum temperature of silicon layer is 65°C



Isometric view of simulation results with aerogel insulation filling the 2-mm gap between the beryllium pipe and first layer of silicon and 1 m/s air flow velocity.