# DSG Ansys R&D Meeting

Date: March 9, 2023
Time: 2:00 PM – 3:00 PM

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

1. **Discussed results of NPS crystal array transient thermal simulation**
   1. For model, carbon fiber and mu-metal dividers and copper cooling shell were considered
    2. Properties used:
        - Heat generated: 0.3 W
        - Film coefficient: 5 W/m^2•°C
        - Ambient temperature: 20°C
        - Copper shell temperature: 10°C
    3. Maximum temperature of crystal array after ~280 hours: 16.378°C
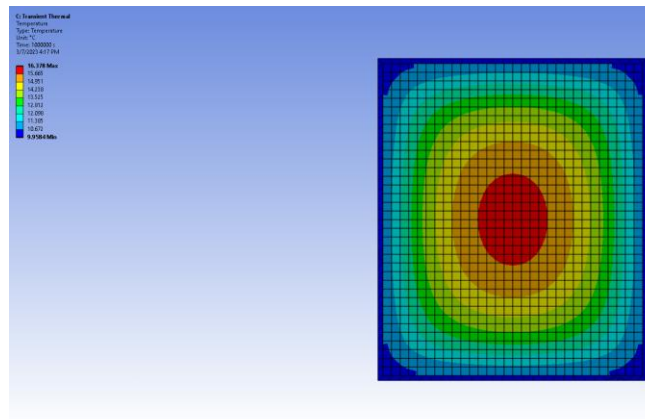
Front view of NPS crystal array after transient analysis.

2. **Discussed EIC beam pipe thermal simulation results at additional air-flow velocities**
    1. 1-mm thick layer of aerogel insulation used
    2. 5-mm between beam pipe and first layer of silicon sensors
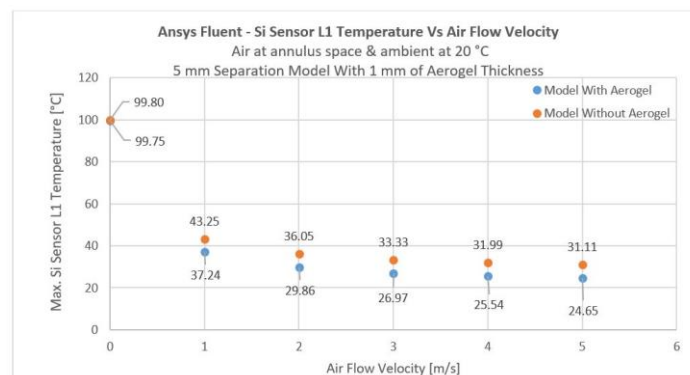
Plot of silicon sensor layer temperature vs. air flow velocity, with and without aerogel insulation

3. **Model of DSG's beam pipe test set up created for future simulations**