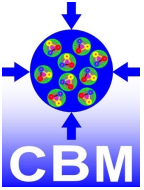


# Cooling - Silicon Tracking System Engineering Design Review

July 7<sup>th</sup>, 2023



# Scope of the Review



The STS cooling system has the following elements:

- heat exchanger plates for the FEE
  - air cooling for inner sensors
  - CO<sub>2</sub>/NOVEC 50 kW cooling plant
  - thermal enclosure
  - NOVEC distribution system
  - temperature/humidity measurement
- } scope of this EDR

The overarching point is the **sensor operating temperature** (as function of time/fluence), which determines the engineering of the components ( $T_{\text{coolant}}$ , flow).

The (positive) review will release funds from BMBF (funding agency) needed to start tendering the cooling plant as well as FAIR project funds for, e.g., for cooling plates!

Review procedure: -> Piotr Gasik (Technical Coordinator)

# Engineering Design Review CBM-STS Cooling



Friday Jul 7, 2023, 9:00 AM → 12:00 PM Europe/Berlin

KBW 5.32 (GSI)

- 20230630\_Agarwal...
- 20230630\_Thaufel...
- Elizarov-Technical ...
- Technical\_Note\_Vib...

Videoconference Rooms

Cooling Meeting ▶ Join

9:00 AM → 9:05 AM	<b>Welcome</b>	5m	
<b>Speaker:</b> Hans Rudolf Schmidt (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))			
9:05 AM → 9:35 AM	<b>STS Cooling Concept and its Exp. Verification</b>	30m	
<b>Speaker:</b> Kshitij Agarwal (Eberhard Karls Universität Tübingen(UT-PIT))			
20230707_Agarwal...			
9:35 AM → 10:05 AM	<b>Performance of the STS Prototype Cooling Plant(s)</b>	30m	
<b>Speaker:</b> Ilya Elizarov (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))			
20230707_Agarwal_CoolingEDR.pdf			
10:05 AM → 10:35 AM	<b>Side-effects of Cooling: Thermals Shocks &amp; Vibrations</b>	30m	
<b>Speaker:</b> Maksym Teklishyn (GSI)			
thermal_shock_vibr...			
10:35 AM → 10:45 AM	<b>Break</b>	10m	
10:45 AM → 12:00 PM	<b>Discussion</b>	1h 15m	