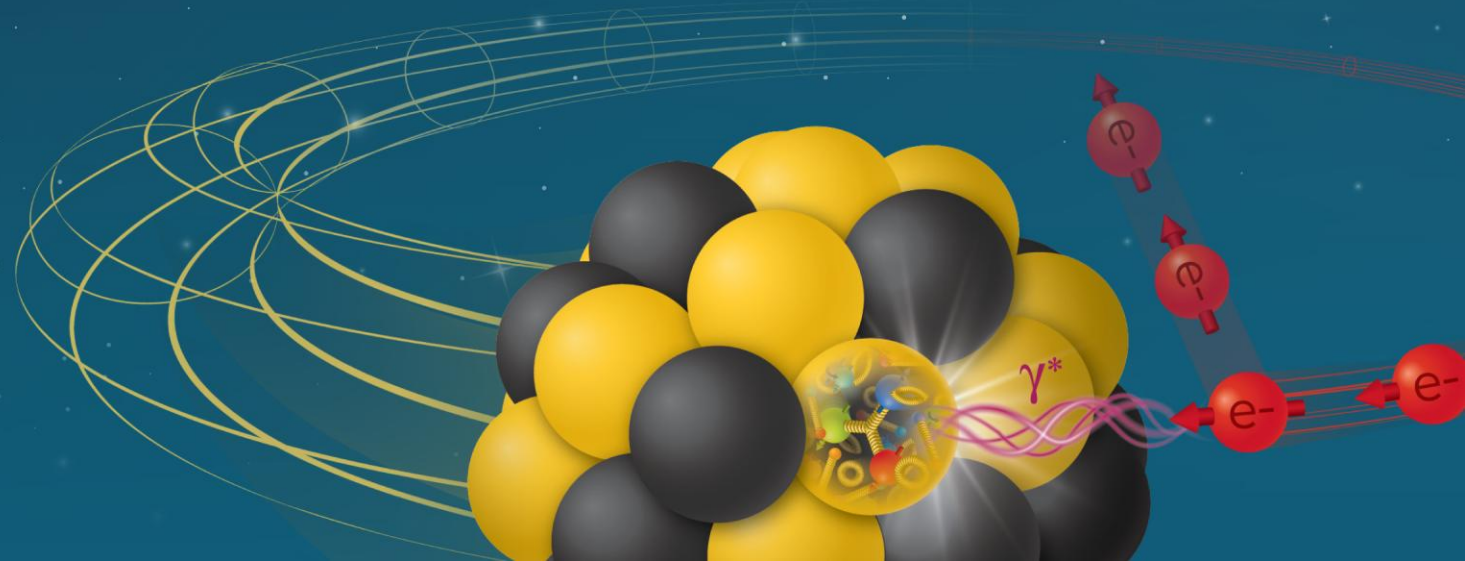


Barrel Outer Tracker / MPGD (μ RWELL)

Triple I Engineering Meeting Update (03/30/2026)

Seungjoon Lee (Jlab)

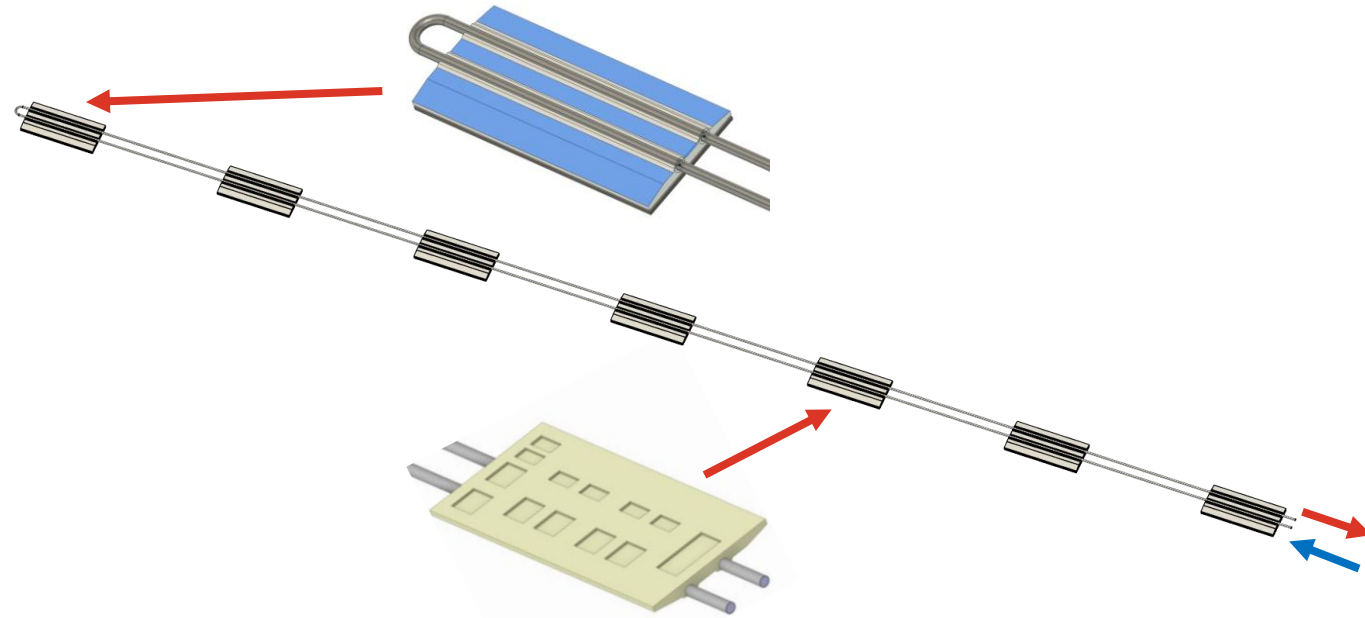


Update - Facility

- Jlab MPGD Facility is moving foreword.
- Major on going process
 - Ultrasonic water bath
 - Sanding station for detector frame
 - Fume hood for vacuum gluing
 - Nitrogen box for GEM foil test
 - Deliver N₂ gas into Cleanroom
 - requires modification of facility - currently working with facility to solve issue.

Update – Thermal study

- Baseline thermal study is done.
- Cooling plan
 - 7 FEBs per one cooling loop
 - 2 cooling loops per detector module
 - 4 cooling loops per section (out of 12)
 - all cooling service from east side
 - 16W per FEB, 112W per cooling loop
 - $T_{in} = 22\text{ }^{\circ}\text{C}$, $T_{out} = 23.9\text{ }^{\circ}\text{C}$
 - Pipe ID = 3.5 mm, OD = 4 mm SS.
 - Flow rate = 13.4 ml/s, Speed = 1.4 m/s
 - Pressure drop = 1.5 psi/m
 - 6.3 W heat to the ambient air



Heat Load

Analytical calculation	112	W
CFD calculation	105.7	W
Difference	6.3	W

Update – Thermal study

- We will stop thermal simulation at this point.
- We will continue to update when FEB components are made/updated.