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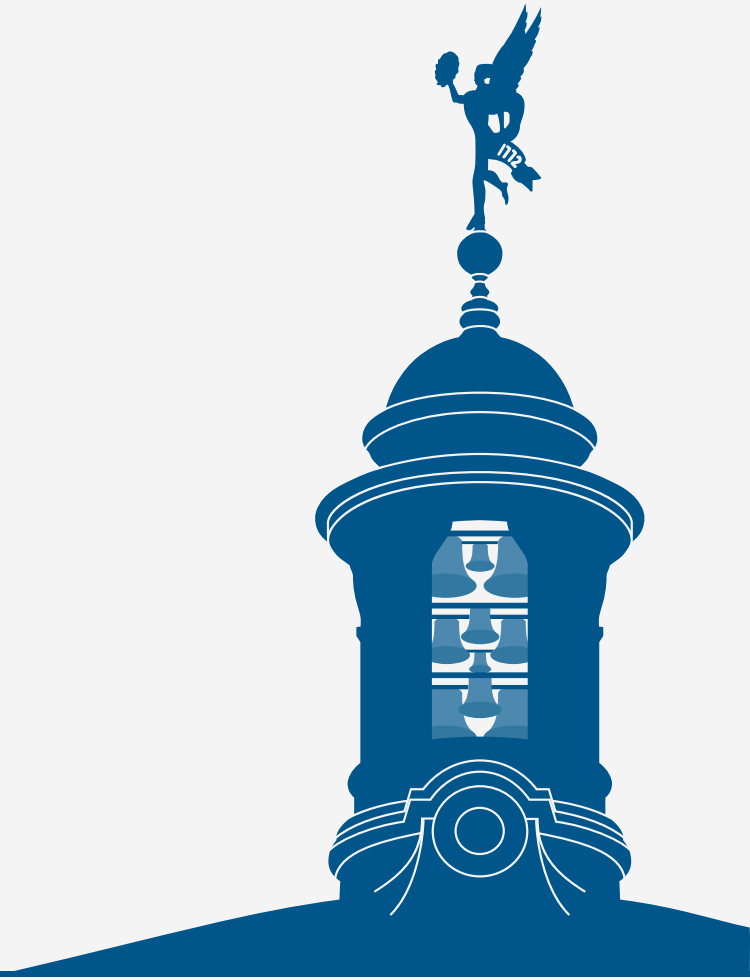
Final Design of the PANDA Target Beam Dump



Philipp Brand

WWU Münster, Institut für Kernphysik, Germany

PANDA collaboration meeting, Prague, June 12 – 16, 2023

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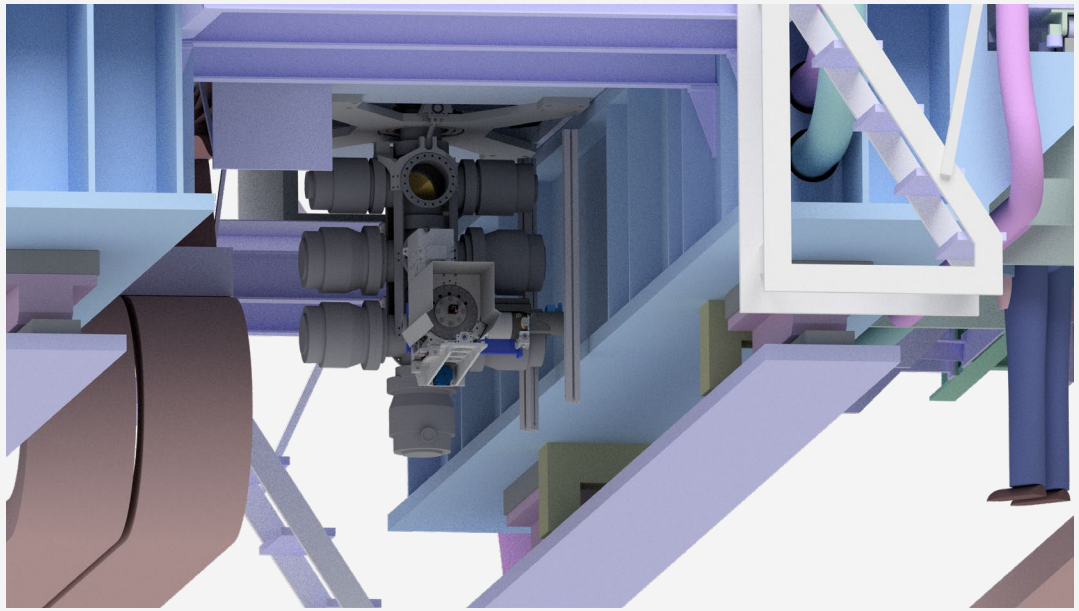
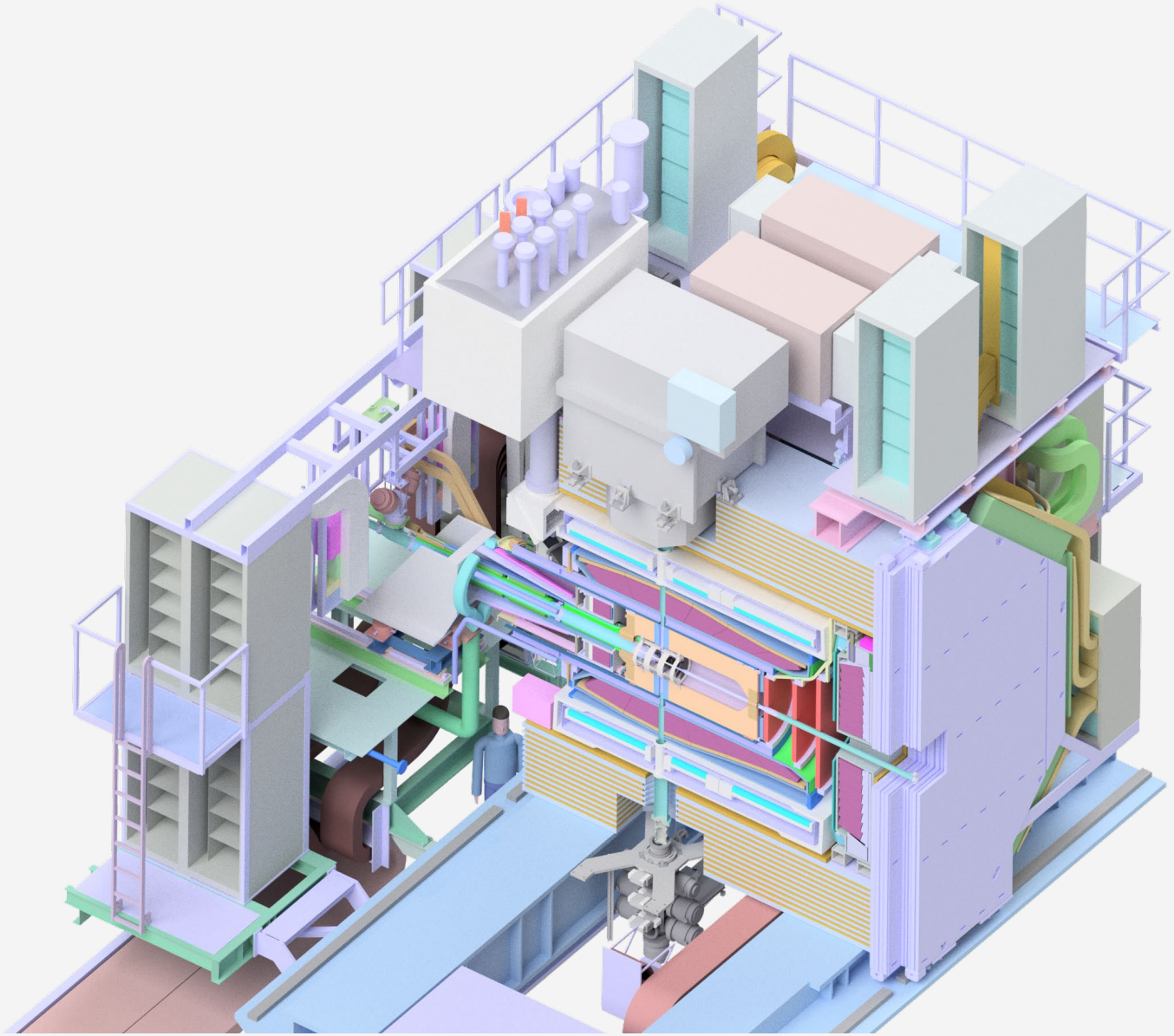
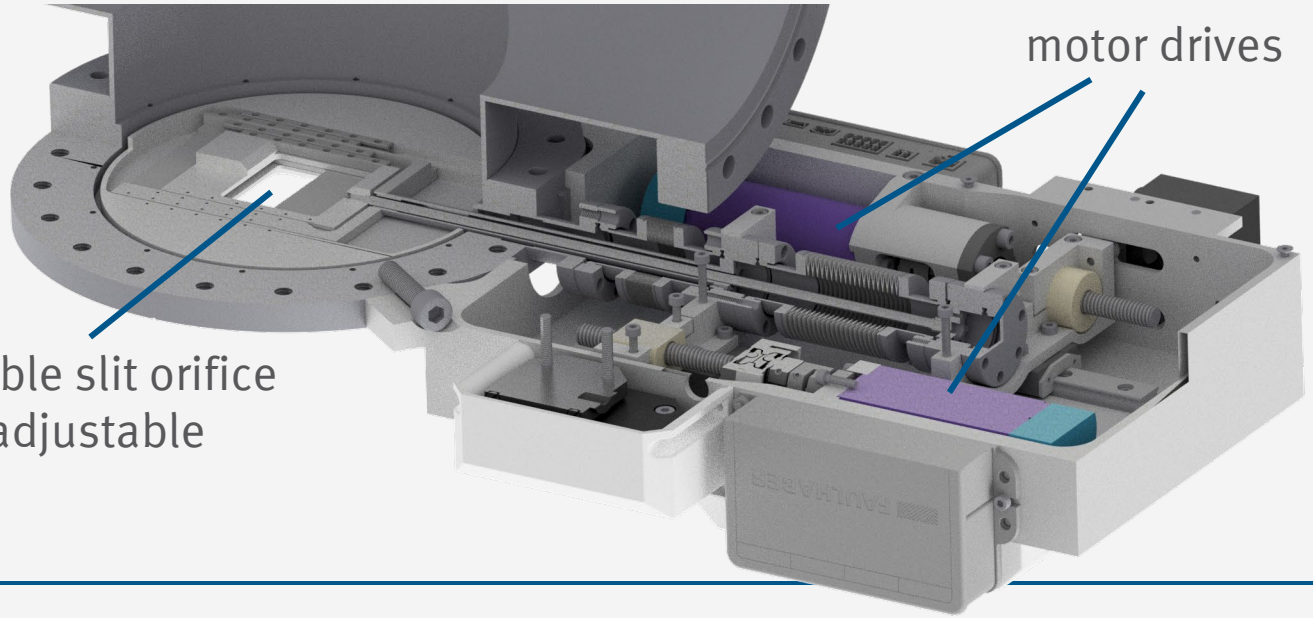
The Beam Dump System

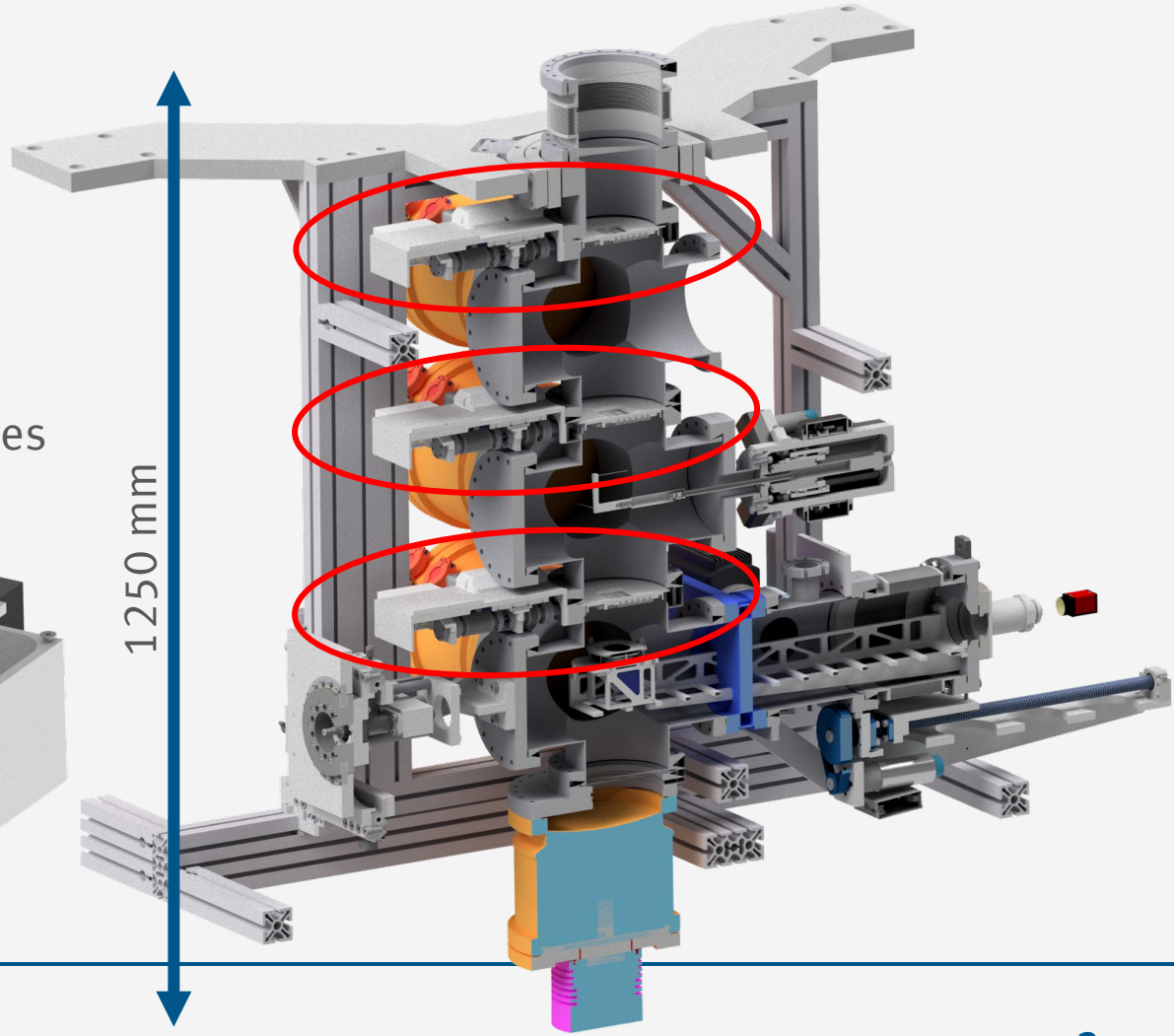




The Beam Dump System

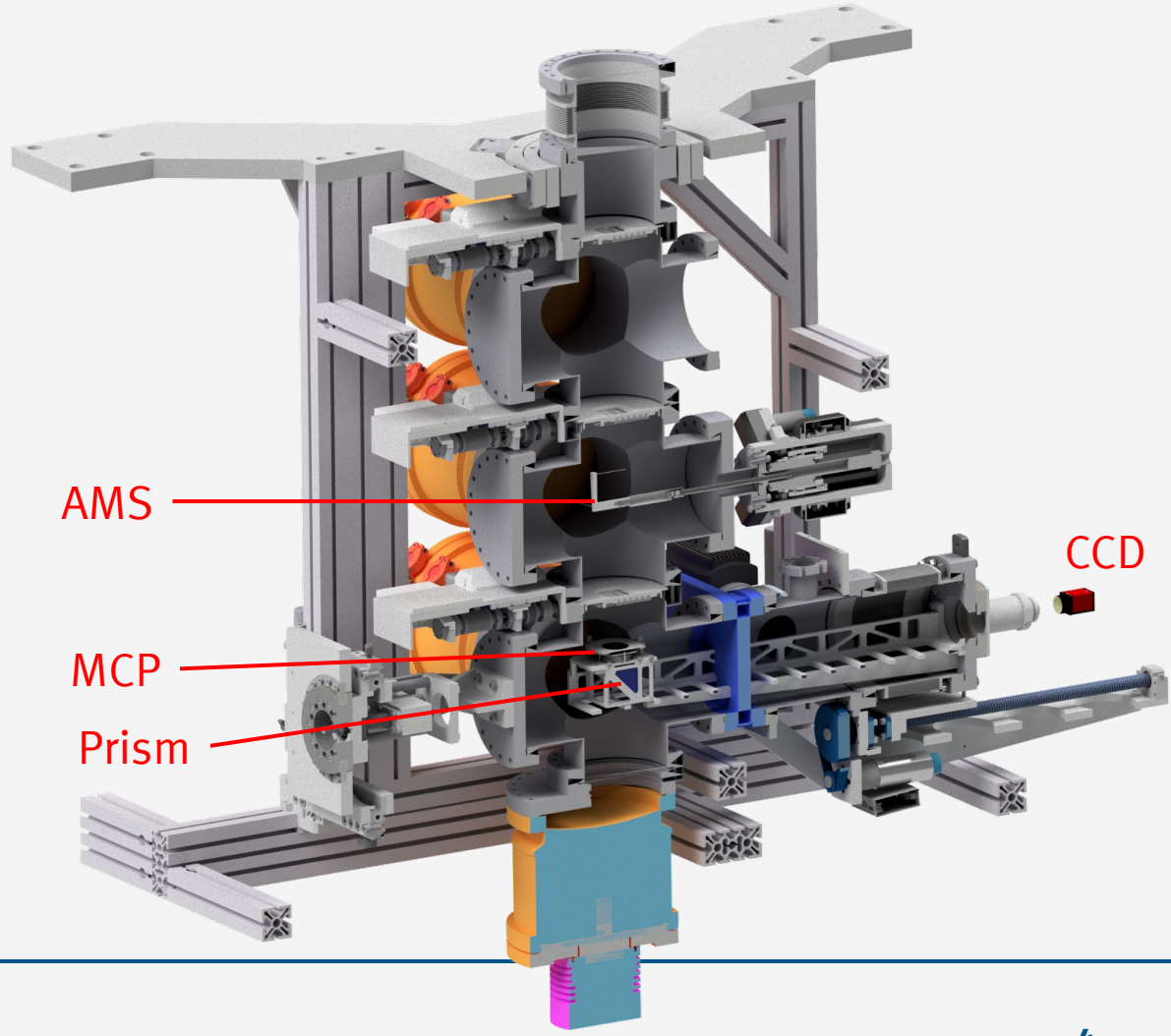
- Similar to current design (3 stages, 7 pumps)
- 3 orifices with variable size





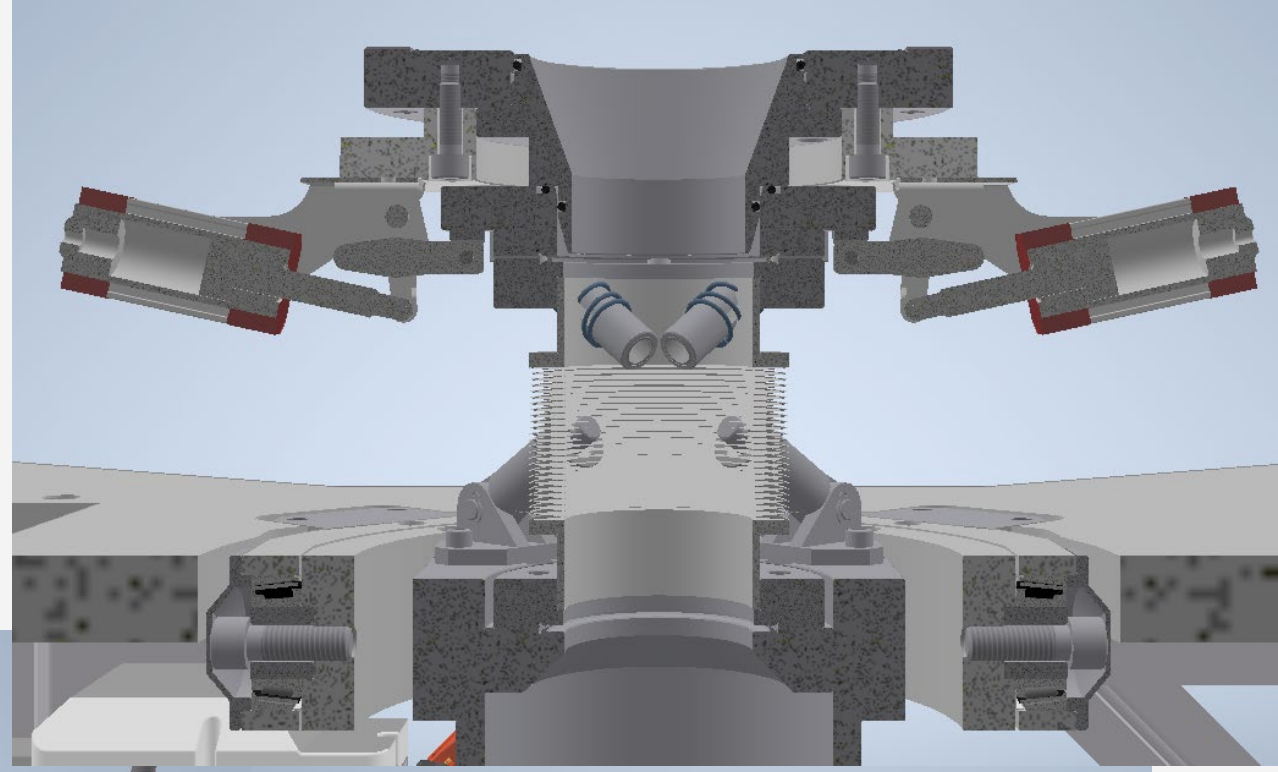
The Beam Dump System

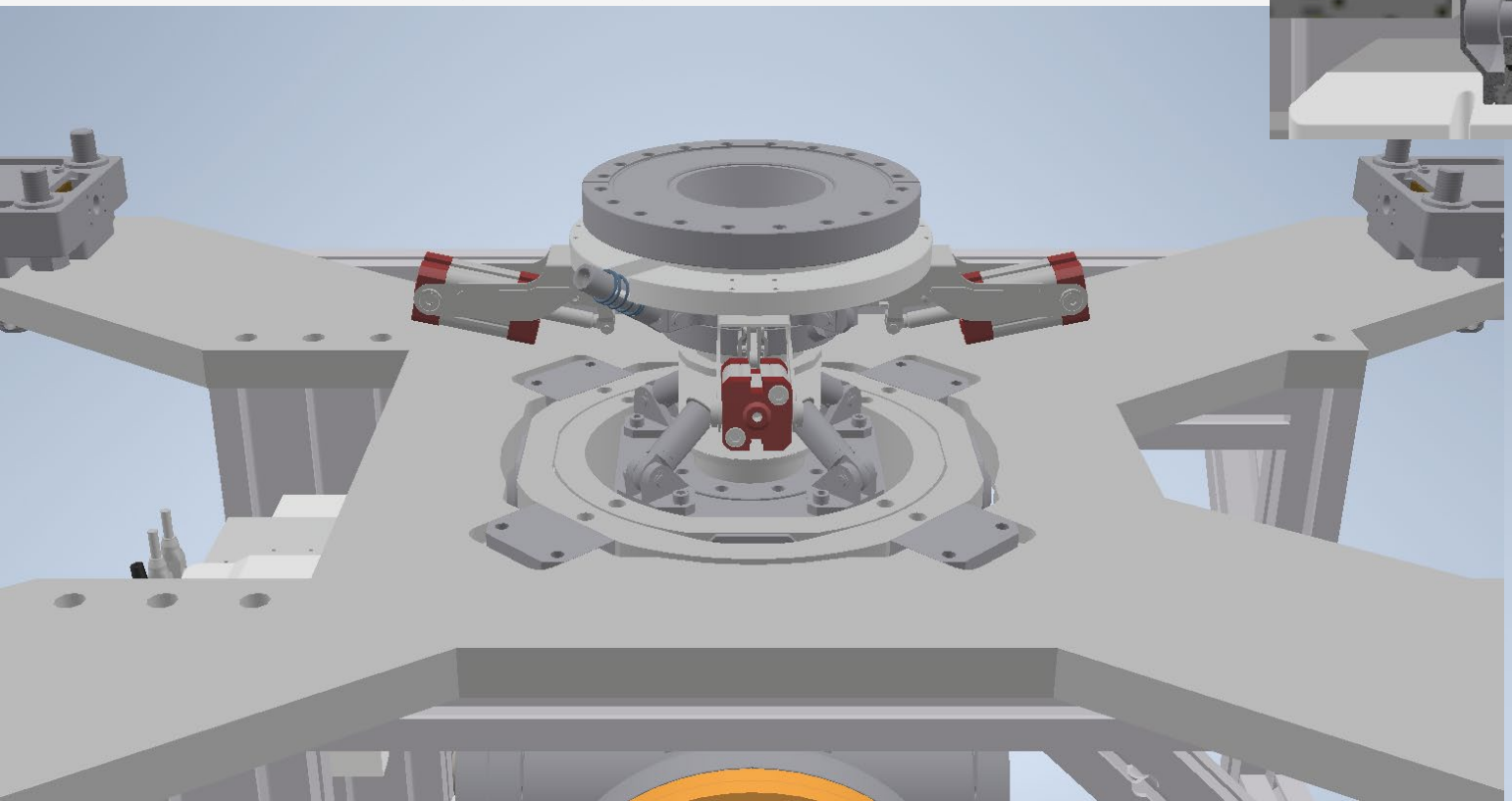
- Similar to current design (3 stages, 7 pumps)
- 3 orifices with variable size
- Can be equipped with several monitor systems
  - Absolute thickness monitor system (AMS)
  - Movable MCP system for 2D beam visualization and cluster velocity measurement
- Design finished; some parts already available

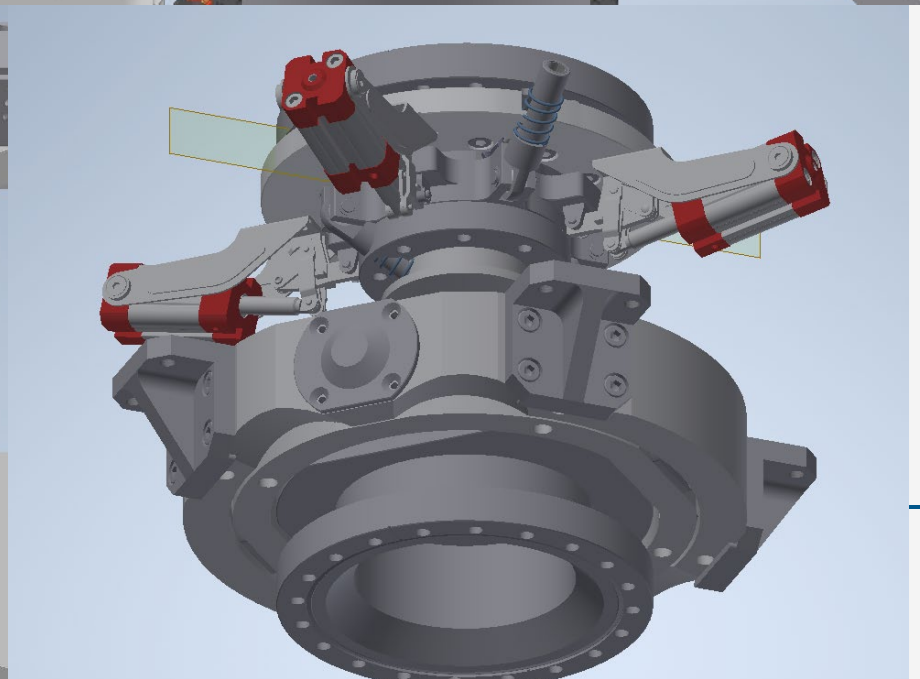


The Beam Dump System

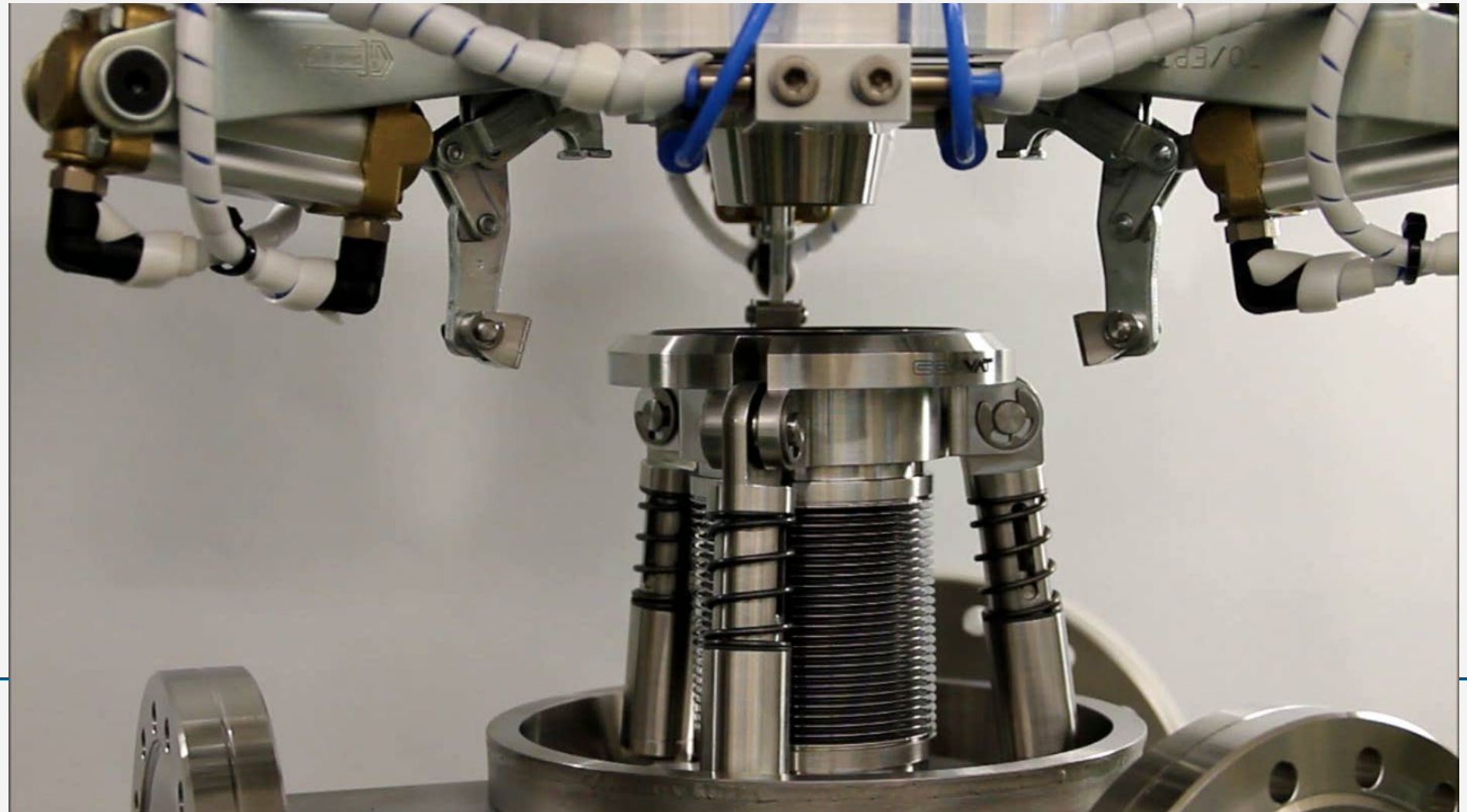
- Beam dump will be connected to target beam line by self-developed snap connector





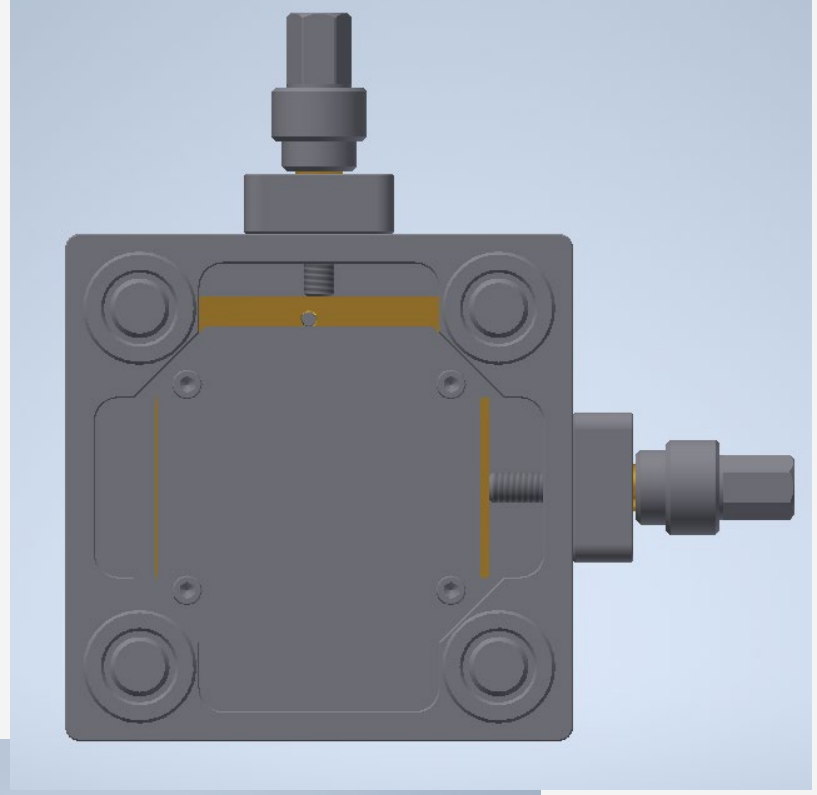


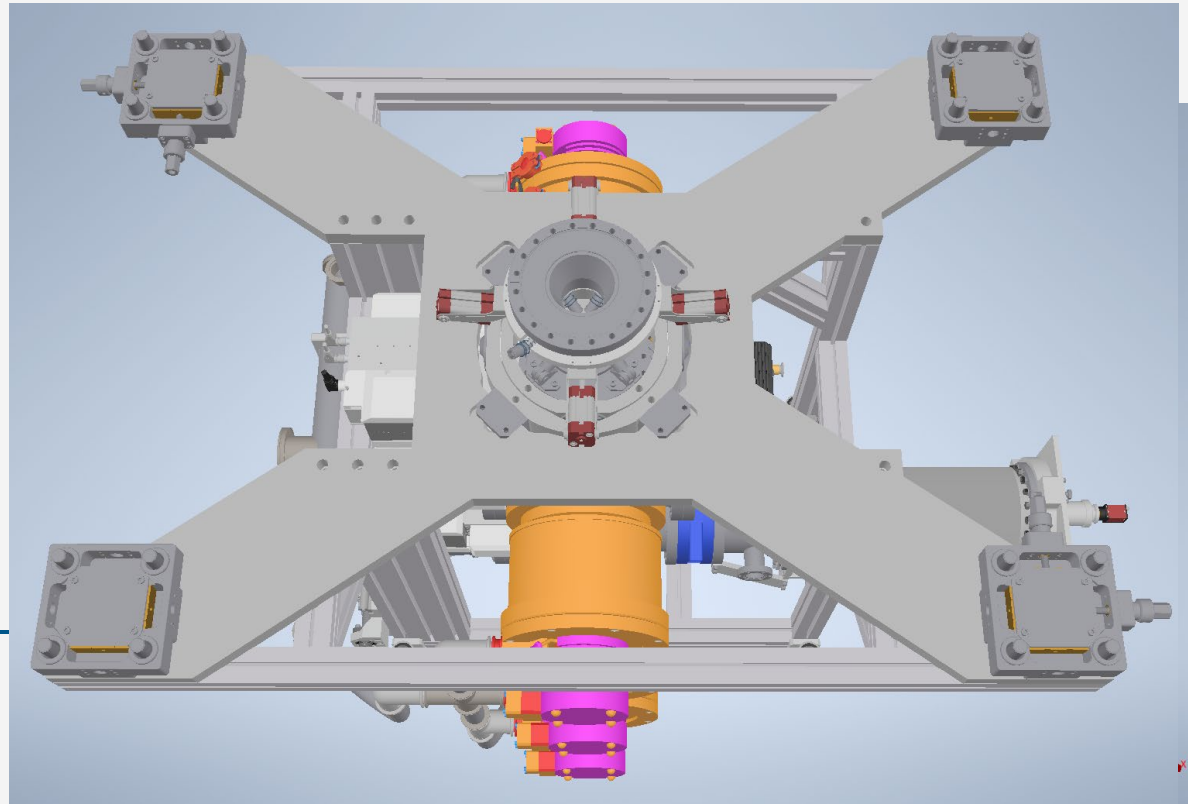
The Beam Dump System

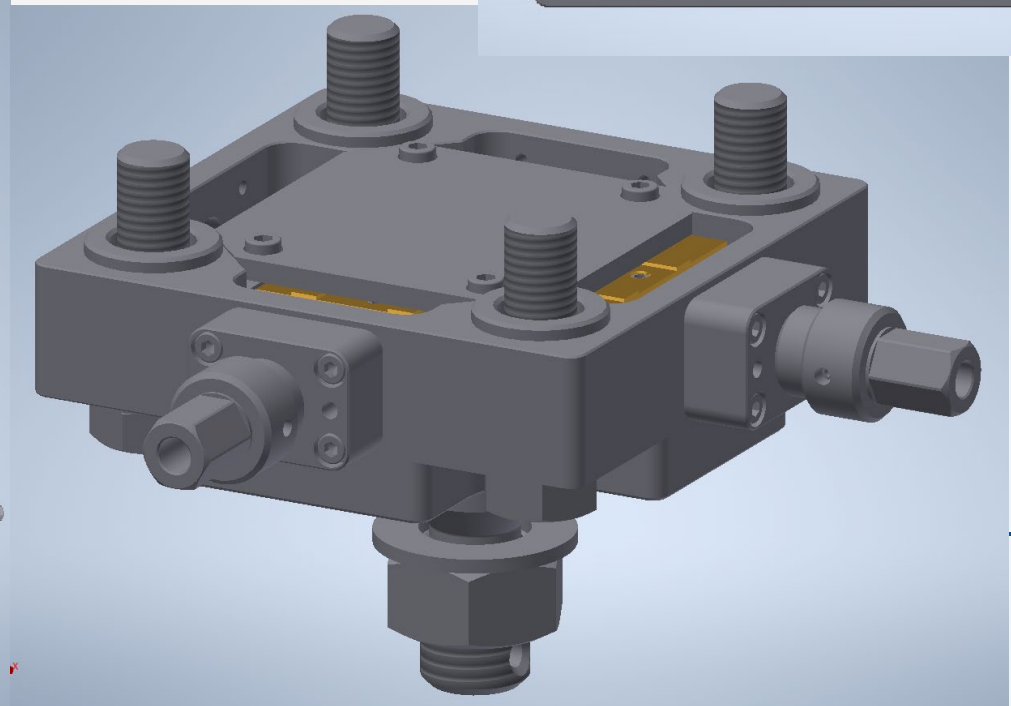


The Beam Dump System

- Beam dump will hang below the solenoid at four defined points, exact position can be adjusted

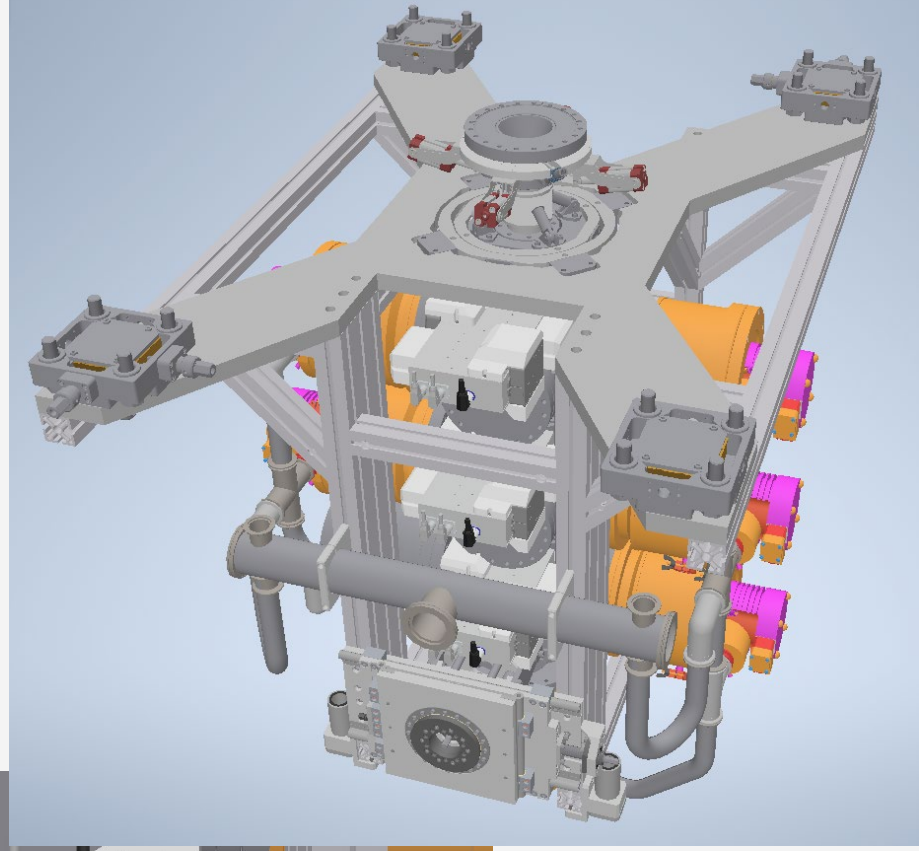


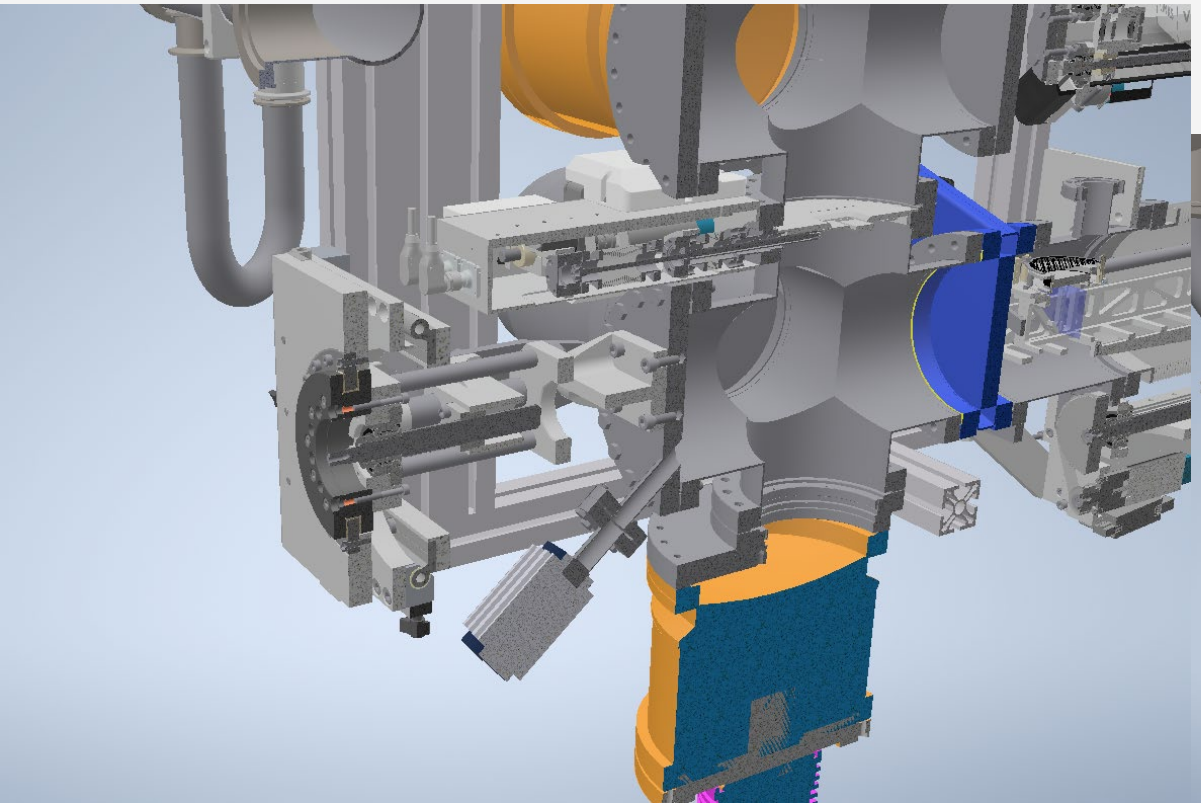


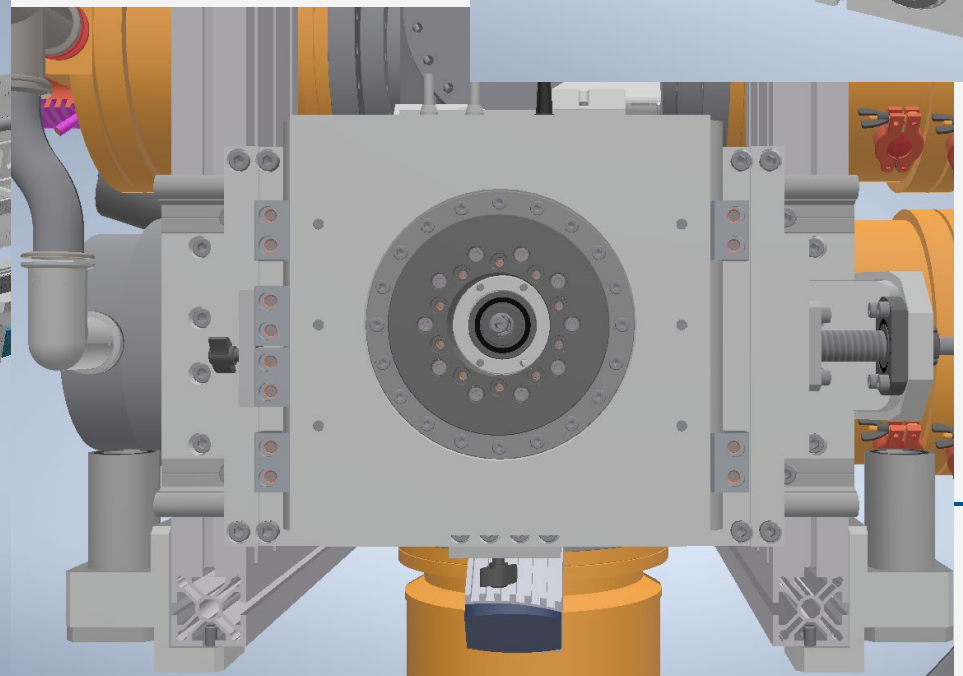


The Beam Dump System

- Complete system can be tilted for perfect adjustment

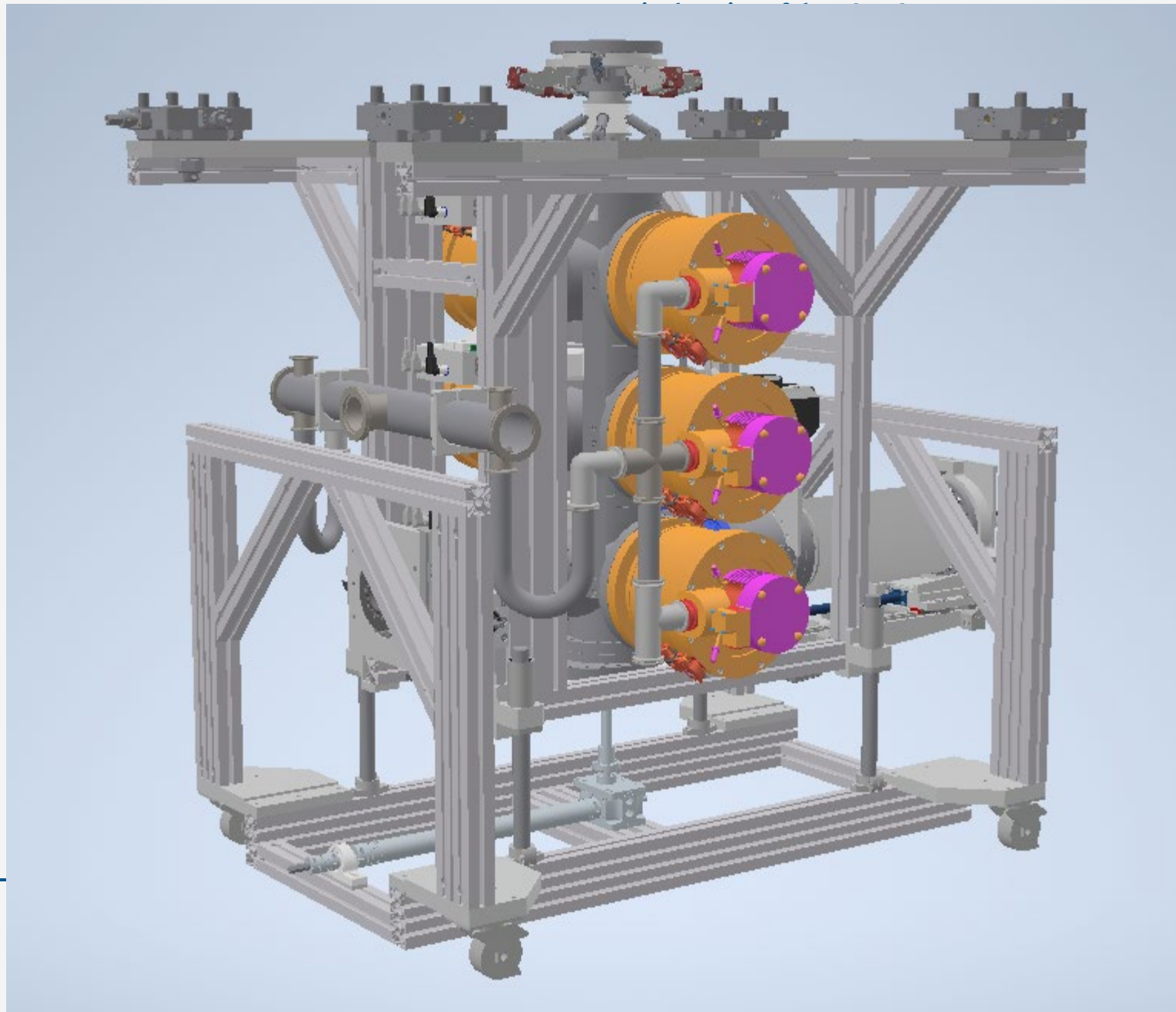






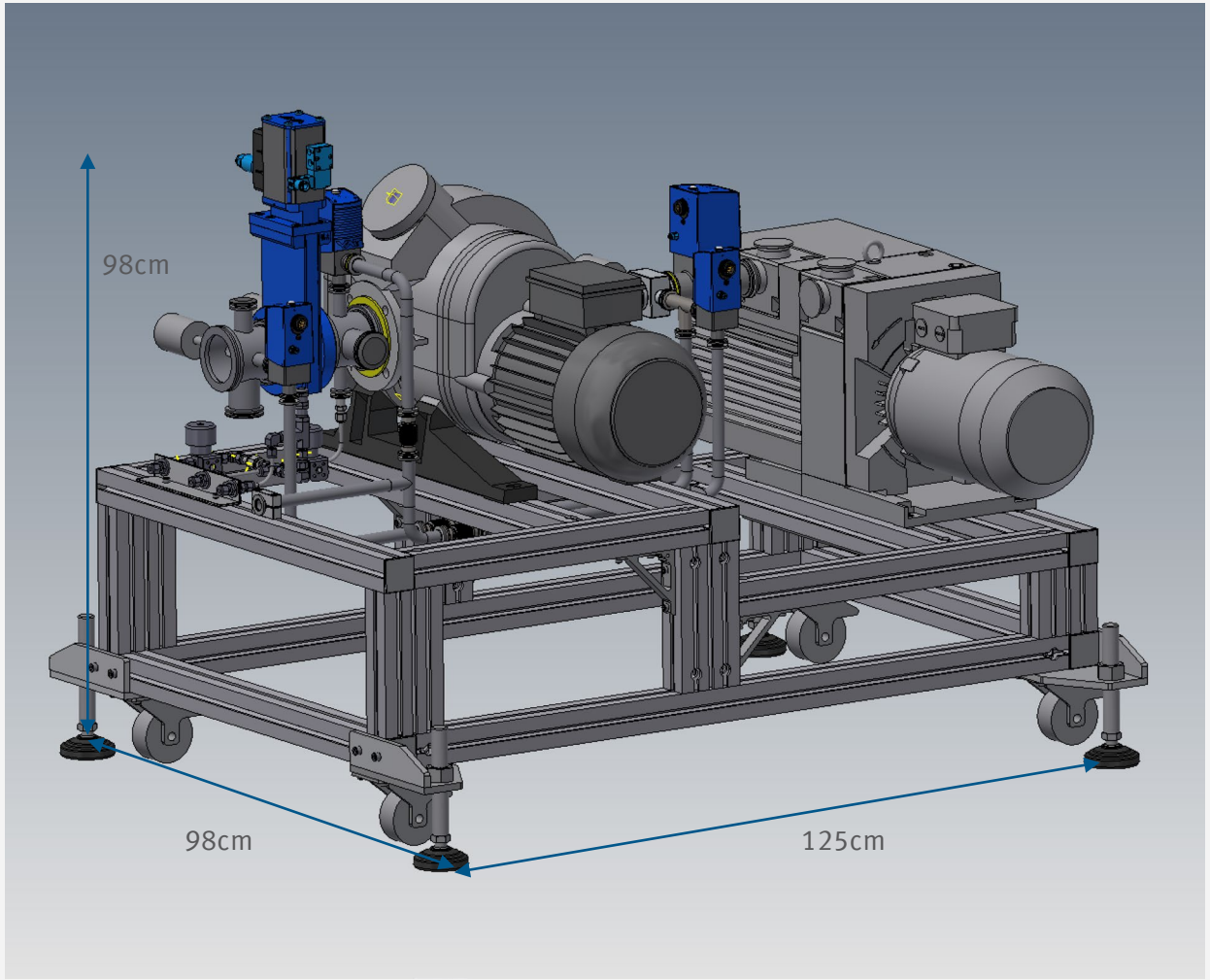
The Beam Dump System

- Complete system can be moved and lifted by a transport frame
- Last turbo pump has to be removed for this (limited height below the solenoid)



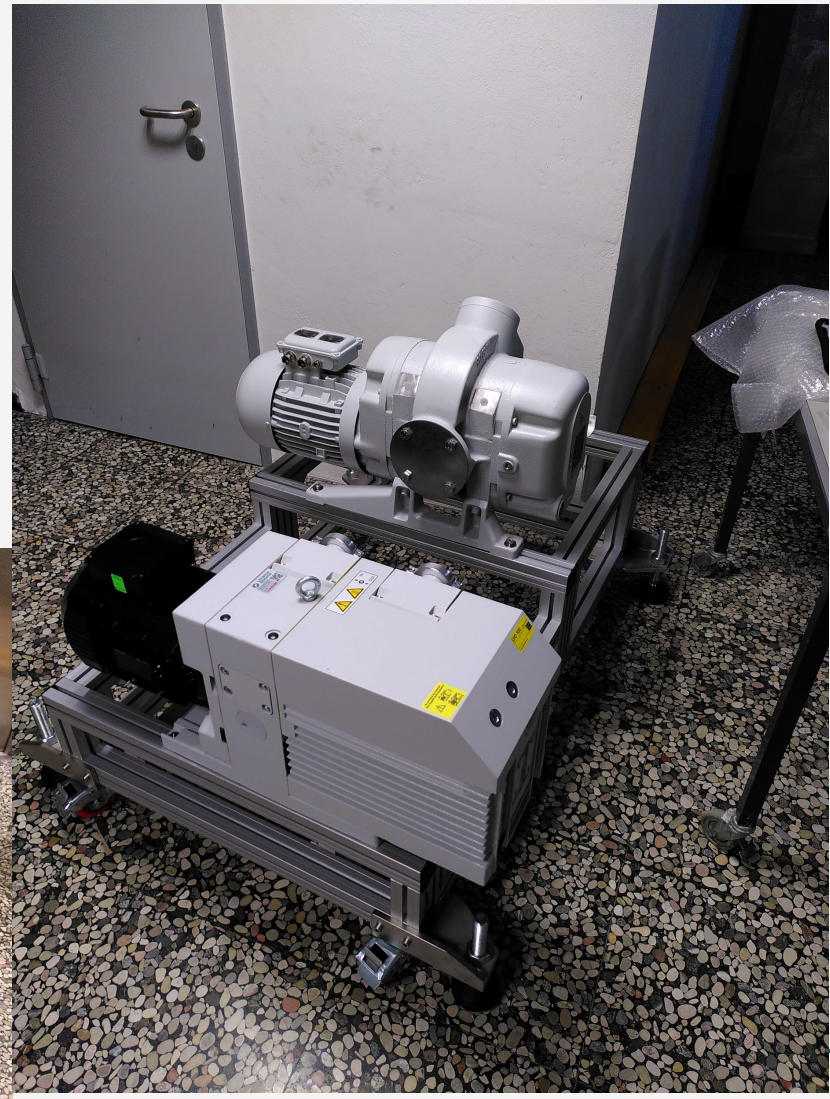
The new Pumping Station

- Rotary vane pump and roots pump
- Remote controllable (pumps, pneumatic valves, gate valves)
- Movable for easy access in maintenance
- Placed under detector directly next to beam dump
- Separate ventilation line with clean gas



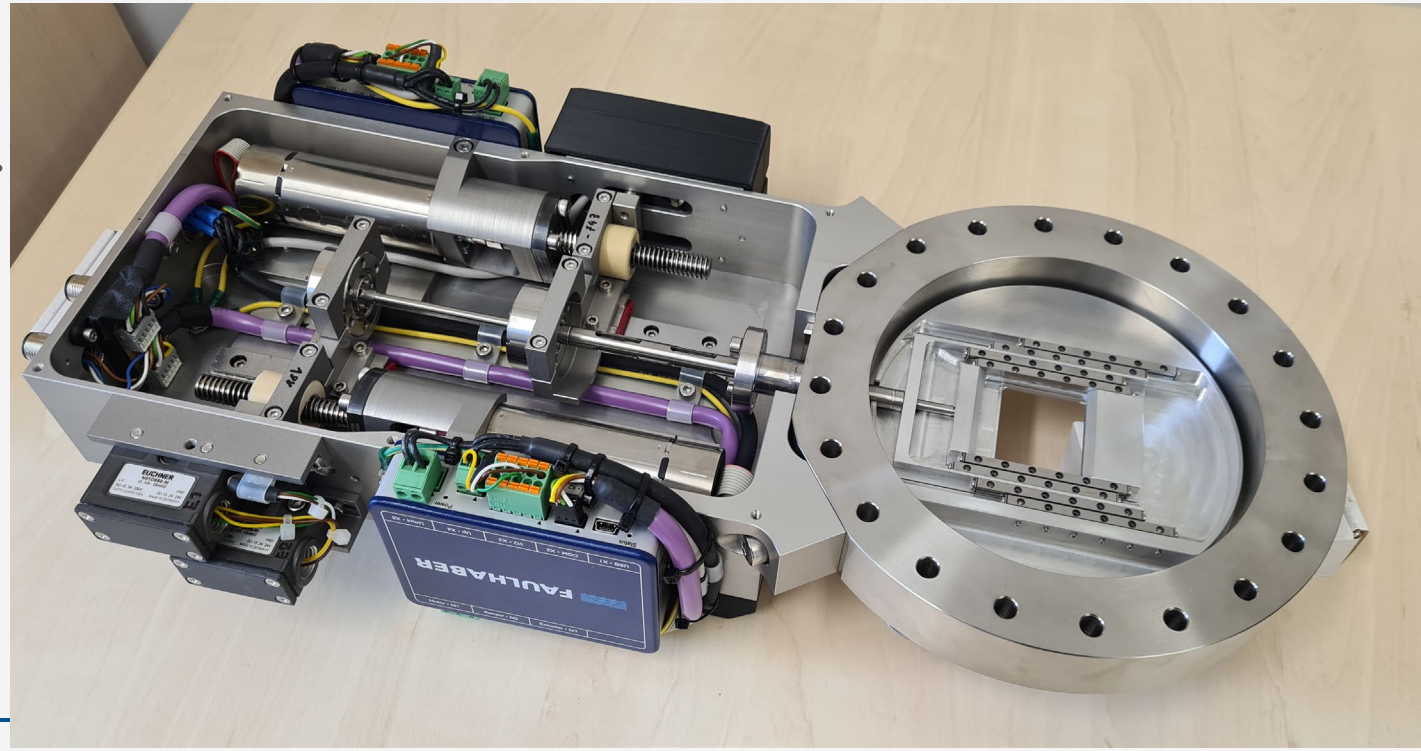
Current progress

- Construction of pumping station has started last week
  - Next step: Installation of pipes, valves, …



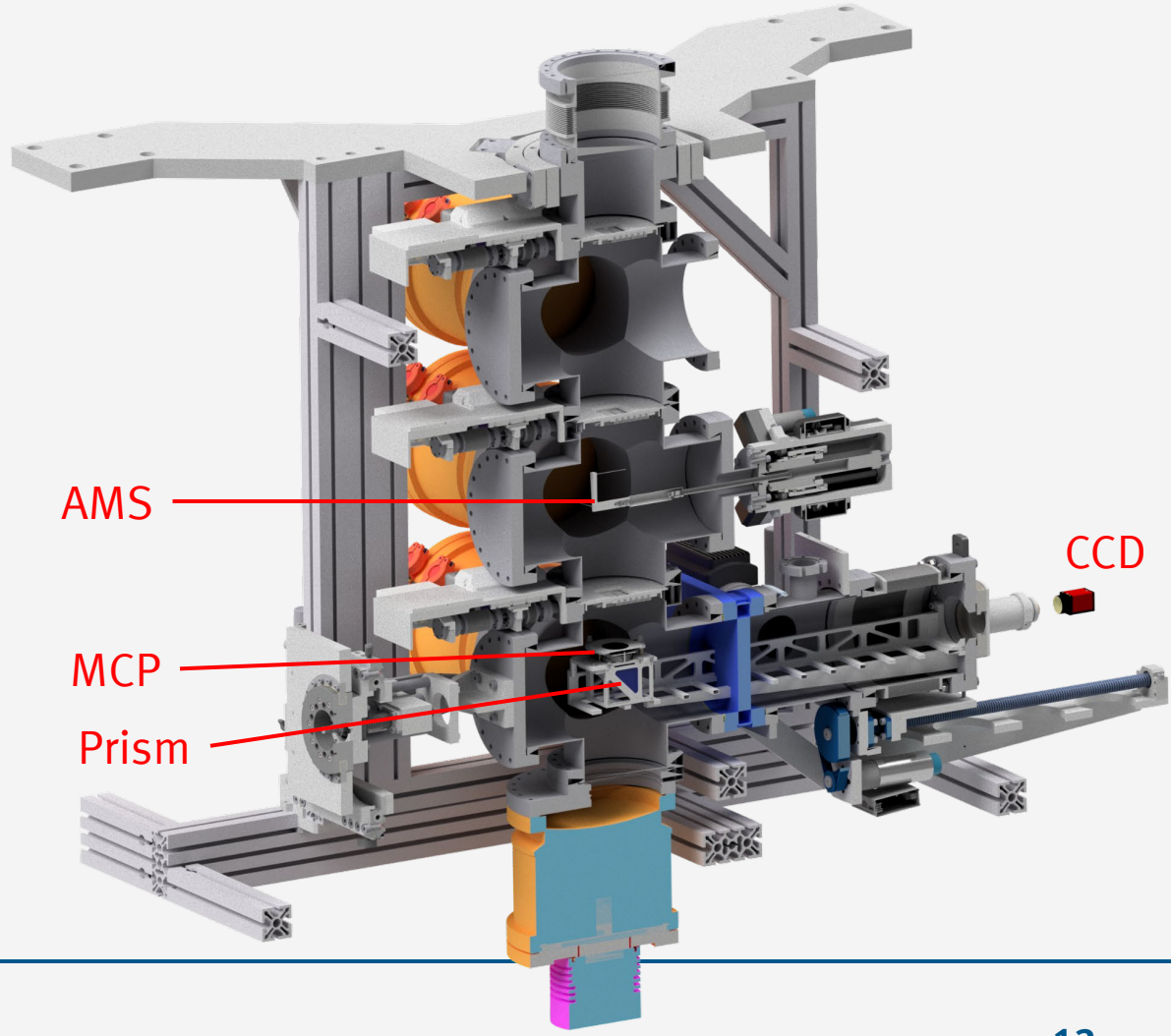
Current progress

- Construction of pumping station has started last week
  - Next step: Installation of pipes, valves, …
- First orifice system has been mounted
  - Next step: Commissioning and control of motors



Current progress

- Construction of pumping station has started last week
  - Next step: Installation of pipes, valves, …
- First orifice system has been mounted
  - Next step: Commissioning and control of motors
- Simplified MCP system has been mounted (see following talk by H. Eick)



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Thank you for your attention!

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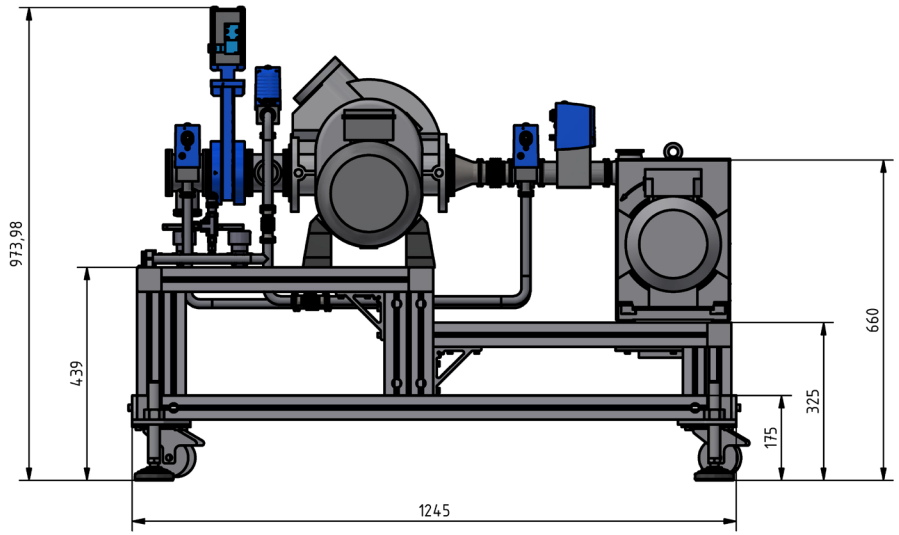
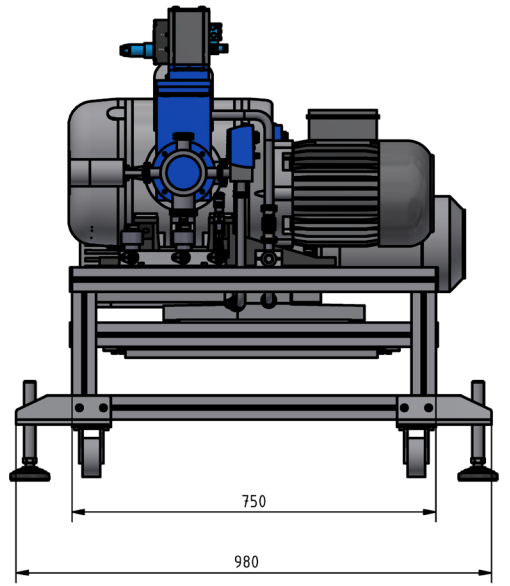
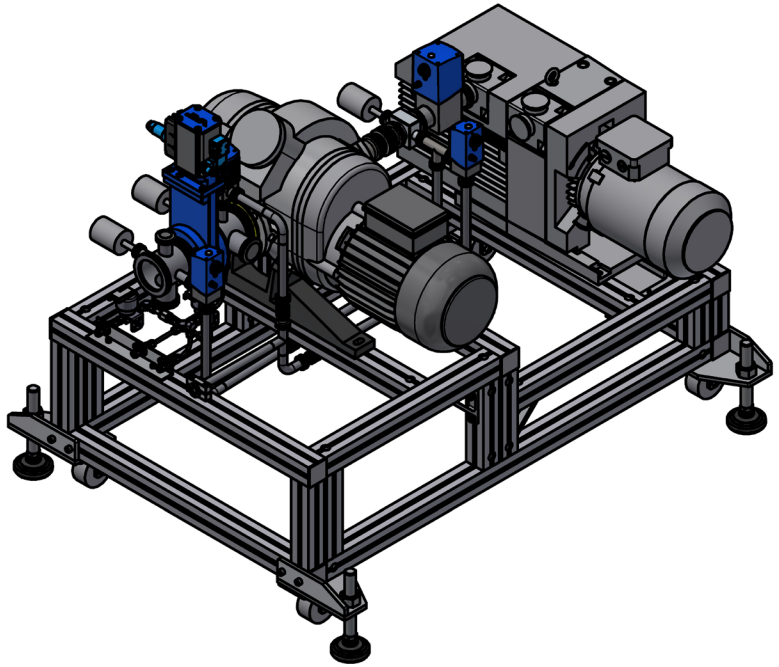
Backup







Oberfläche:
Allgemeintoleranzen ISO 2768-fH-E
Projektion ISO 5456-2:

Arbeitsgruppe/Projekt	Erstellt durch	Werkstoff	Menge	Maßstab
Khoukaz-MCT_PANDA	Rummler		1	1 : 10

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Institut für Kernphysik
Wilhelm-Klemm-Str. 9
48149 Münster

Dokumentenart	Kostenelement
Baugruppe	3120058400

Bauteilnummer, Titel	Zeichnungsnummer
02PAN20398 Pumpstand_Detektor	02PAN20398-Pumpstand_Detektor

Änd.	Ausgabedatum	Spr.	Blatt
V218	13.09.2022	de	1

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