

Storage Ring Developments at the Diamond Light Source



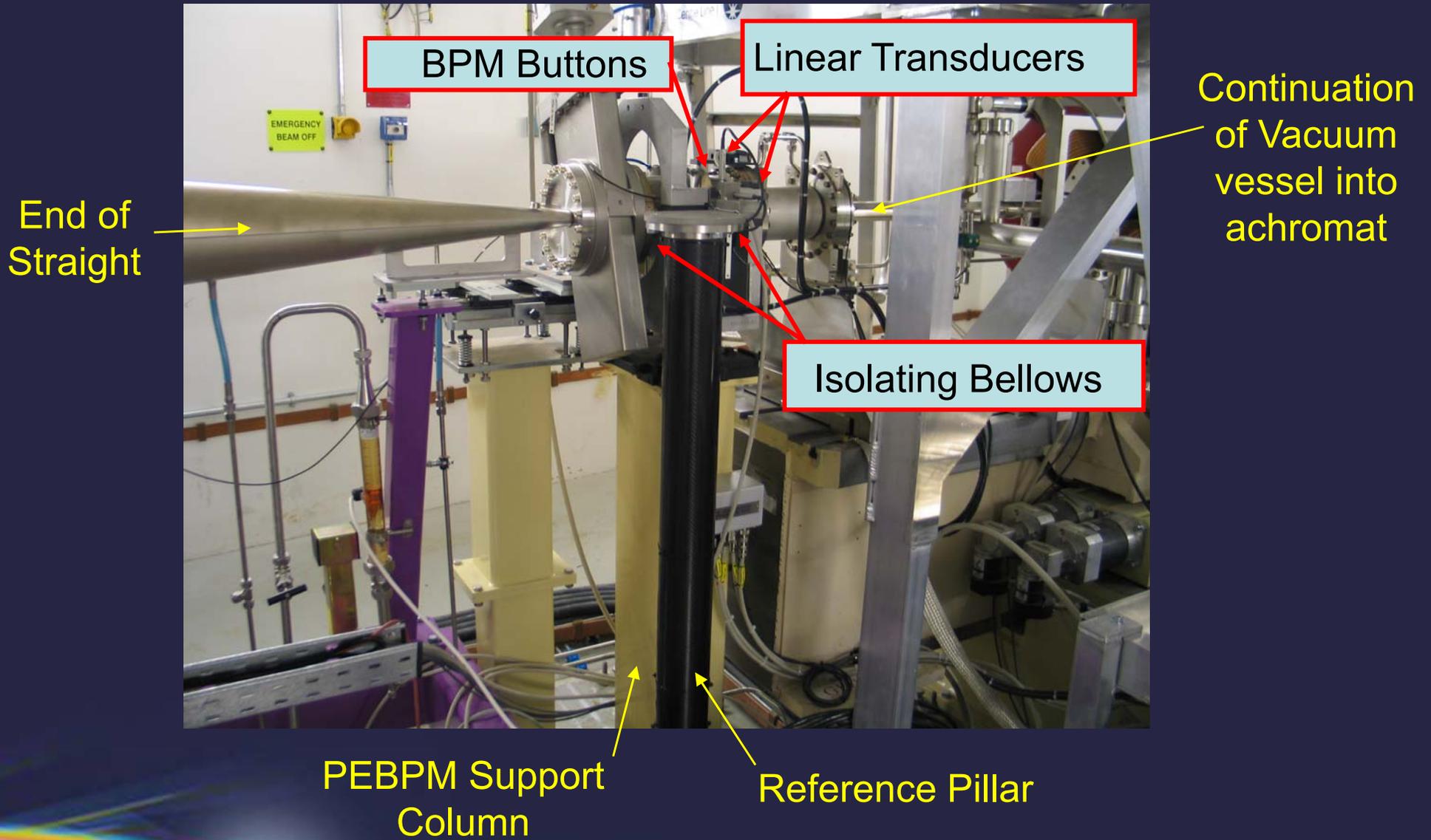
Nigel Hammond



Topics

- 1) Some operational experience with the Electron Beam Positioning System.
- 2) The design of the first mirror of the Visible Light Extraction Diagnostic.
- 3) The new work on the Storage Ring modifications associated with new Infrared Extraction Beam

Primary Electron Beam Position Monitor

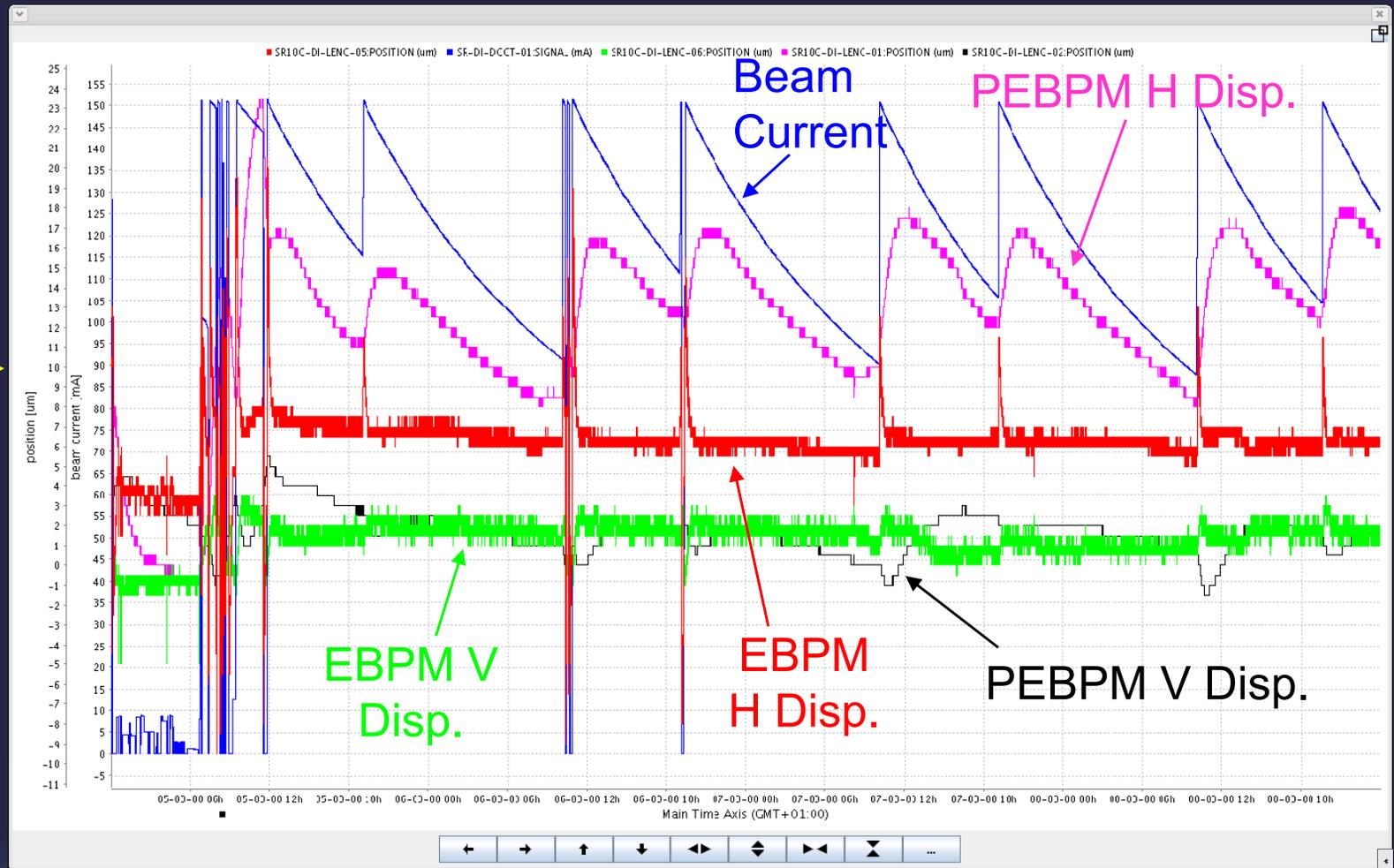


PEBPM displacements without cooling + EBPM displacements for comparison

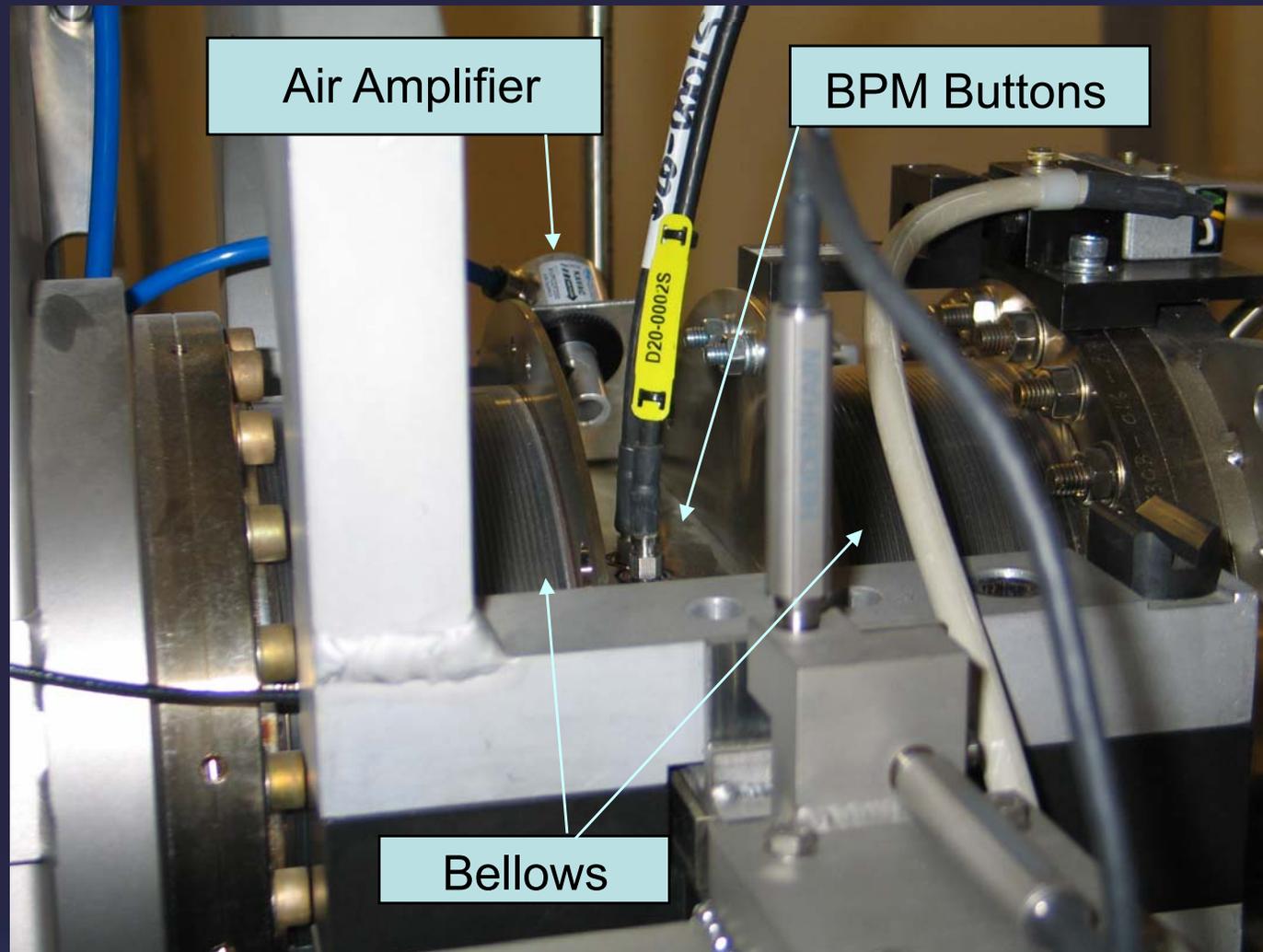
20 μm \longrightarrow

10 μm \longrightarrow

0 μm \longrightarrow



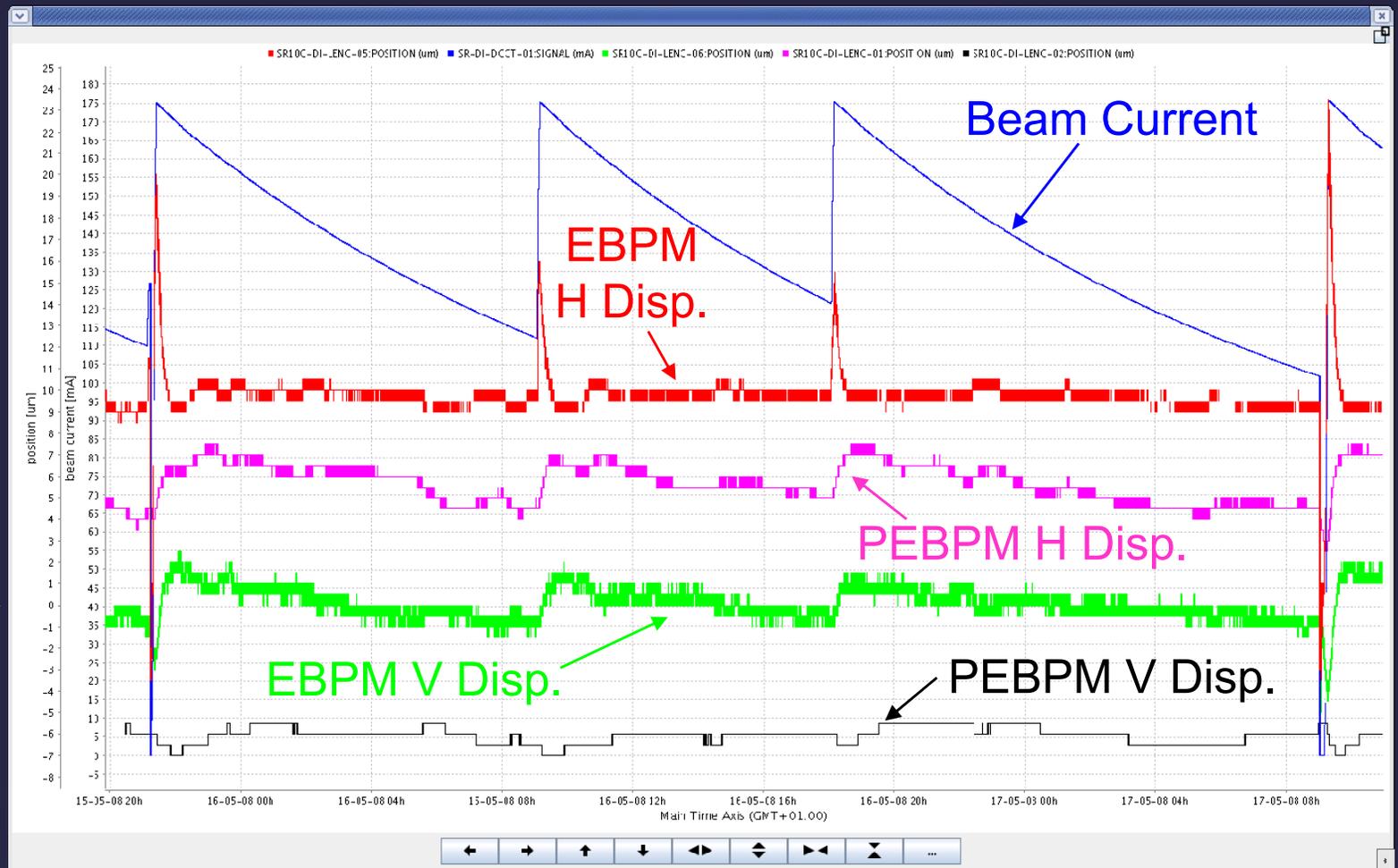
Addition of Air Cooling to PEBBPM



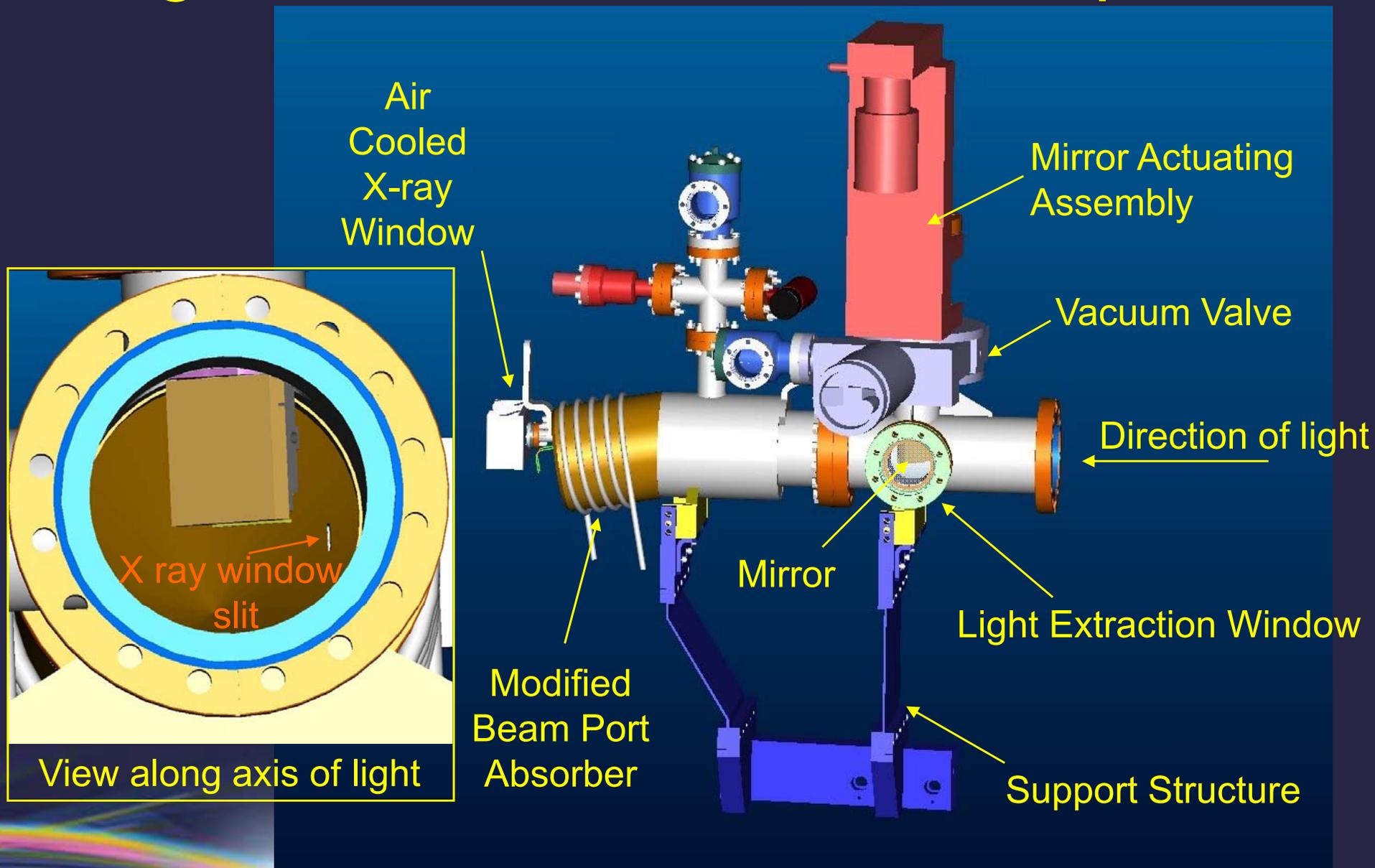
PEBPM Displacements with Cooling

10 μ m →

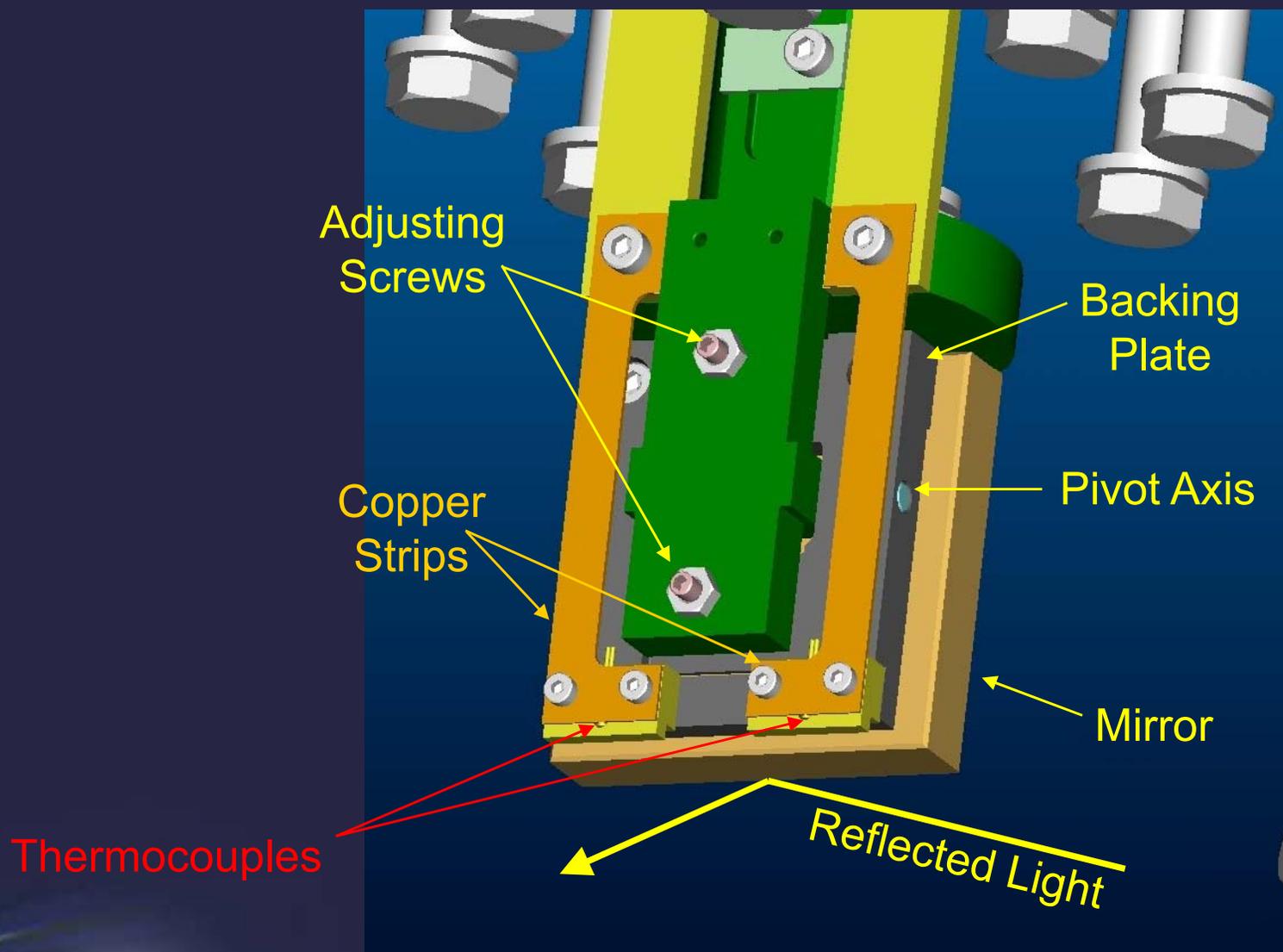
0 μ m →



Light Extraction Vacuum Components



Visible Light Extraction Mirror

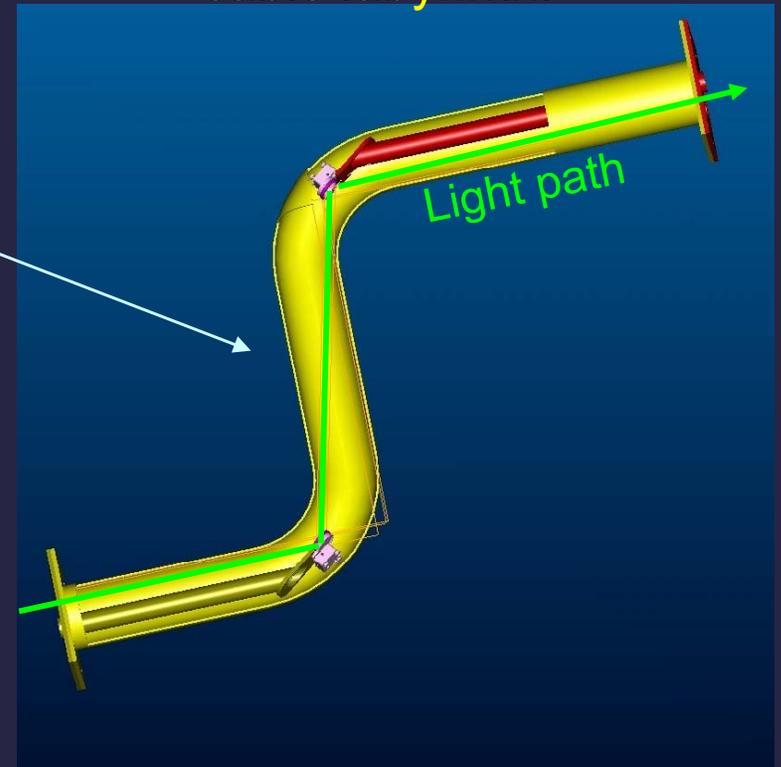


Overall Layout of Visible Light Extraction

Aligned by directing a laser back from the Experimental Hall to the first mirror via an unused cable labyrinth.



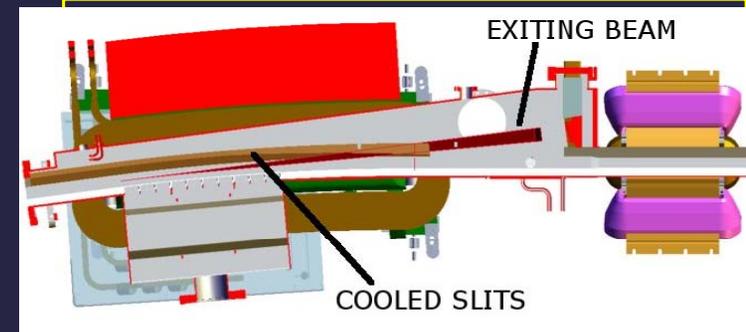
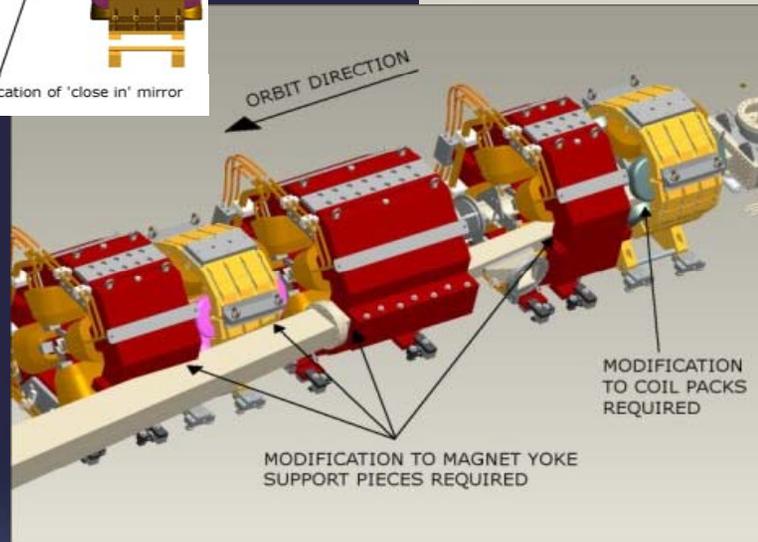
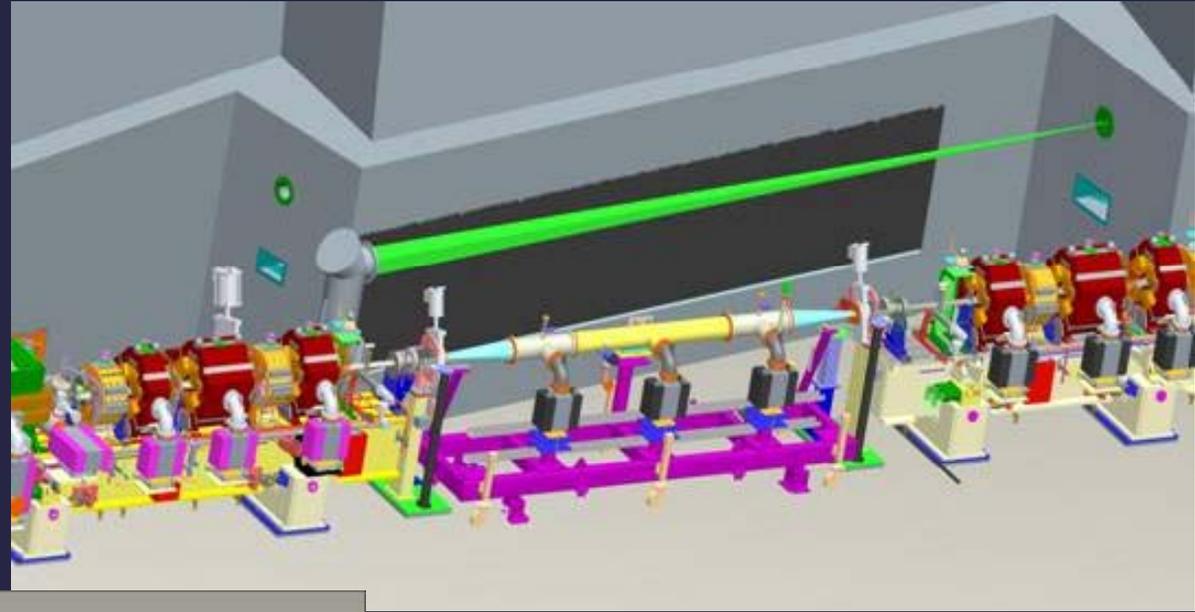
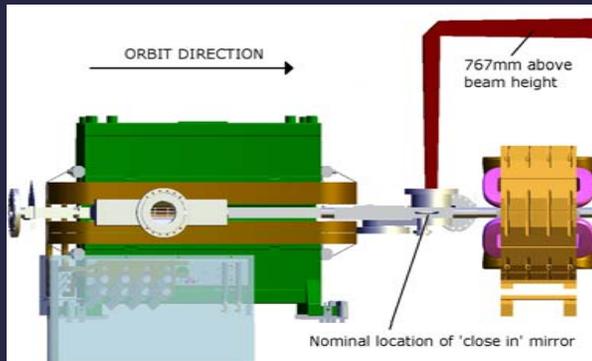
Path of Visible Light Extraction



Remotely adjustable mirror system in cable labyrinth

Infra Red Extraction

Conceptual view of IR Extraction path

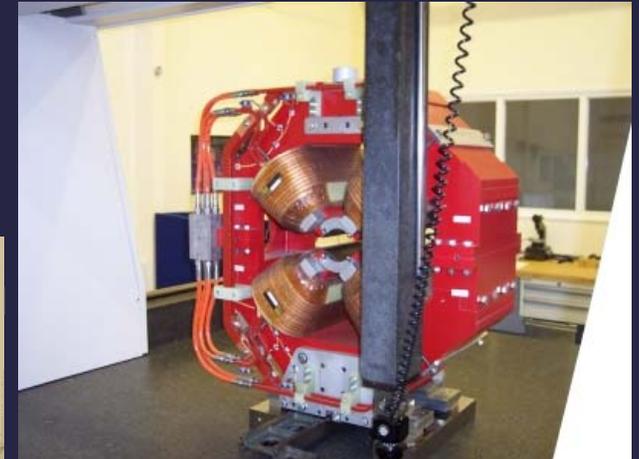


The beamline will be dedicated to Micro-Spectroscopy in the mid -IR domain, but due to the wide Front End, it can deliver flux up to the far-IR region, including both bending, and edge radiation

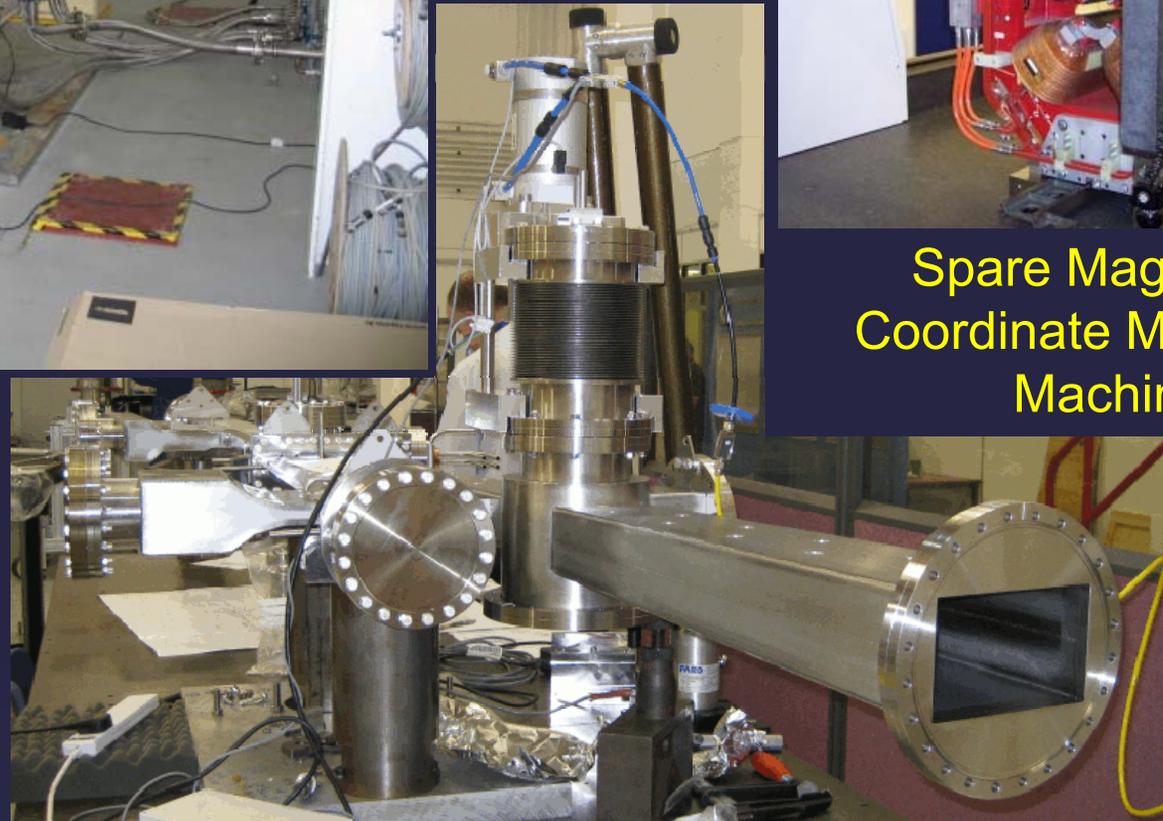
Spare Girder Modification and New Vessel Build



Spare girder in located in girder build facility ready for modification



Spare Magnet on Coordinate Measuring Machine



New Dipole/Crotch Vessel in manufacture

Thanks to:

- Günther Rehm
- Gianfelice Cinque
- George Howell
- Ron Godwin
- Roger Holdsworth