



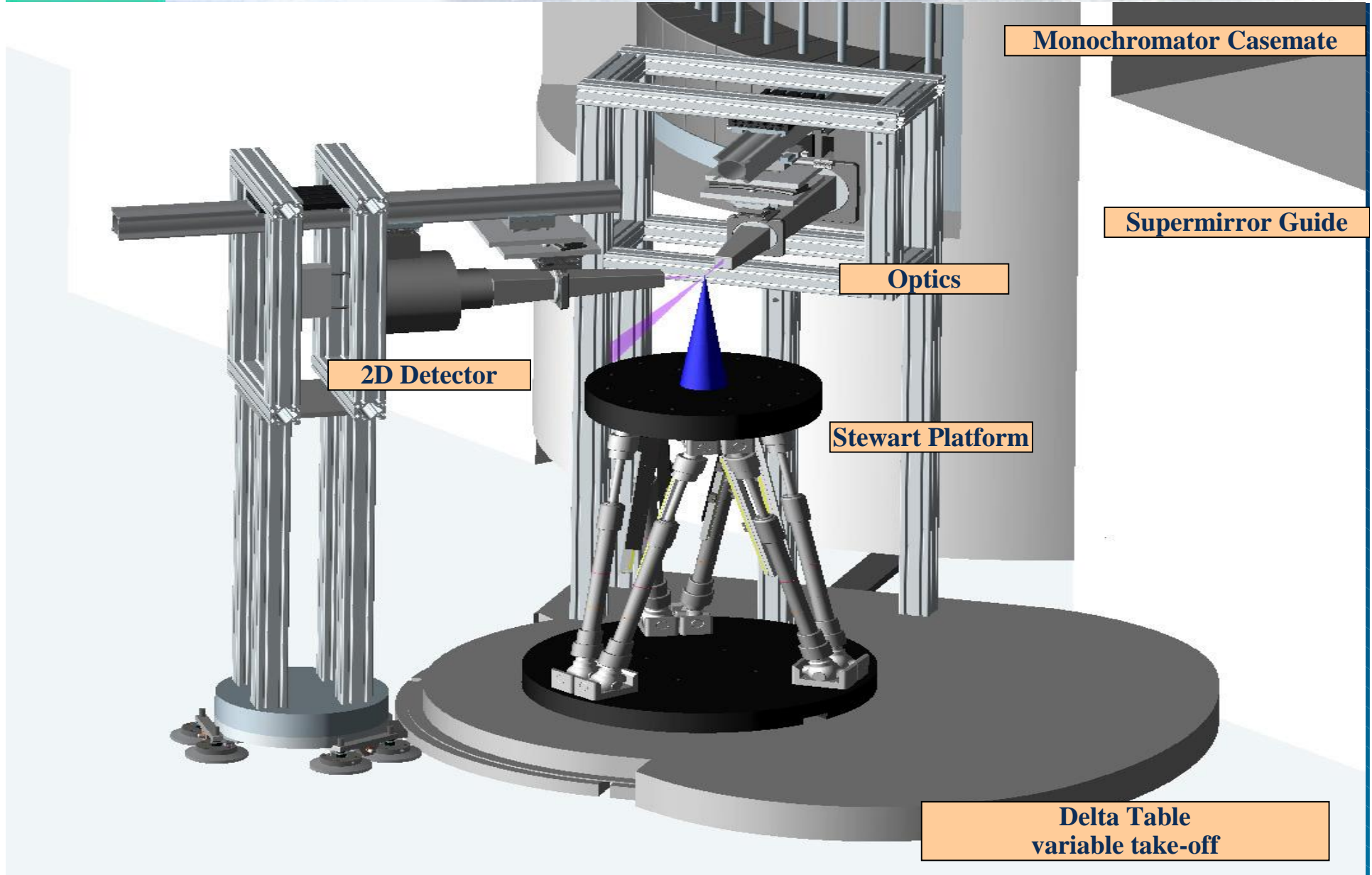
G. Bruno, T. Pirling, S. Rowe, Wm. Hutt, & P.J. Withers

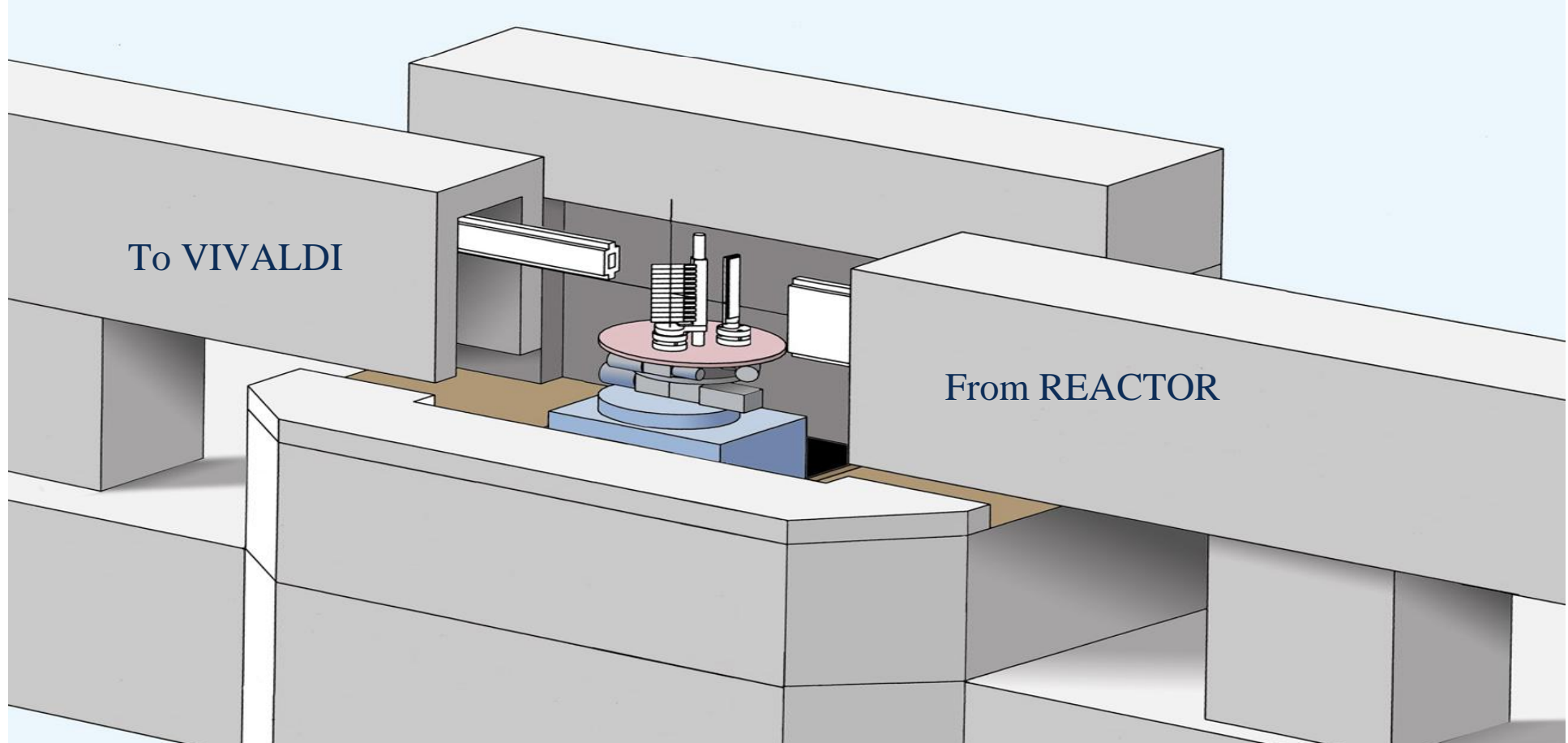
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Manchester Materials Science Centre, Grosvenor Street, Manchester M1 7HS, UK

SALSA will provide high neutron flux & space for samples of more than 1 m length and up to 500 kg weight. A unique feature is the Stewart Platform (hexapod), which provides very flexible, yet very precise, sample positioning and orientation.

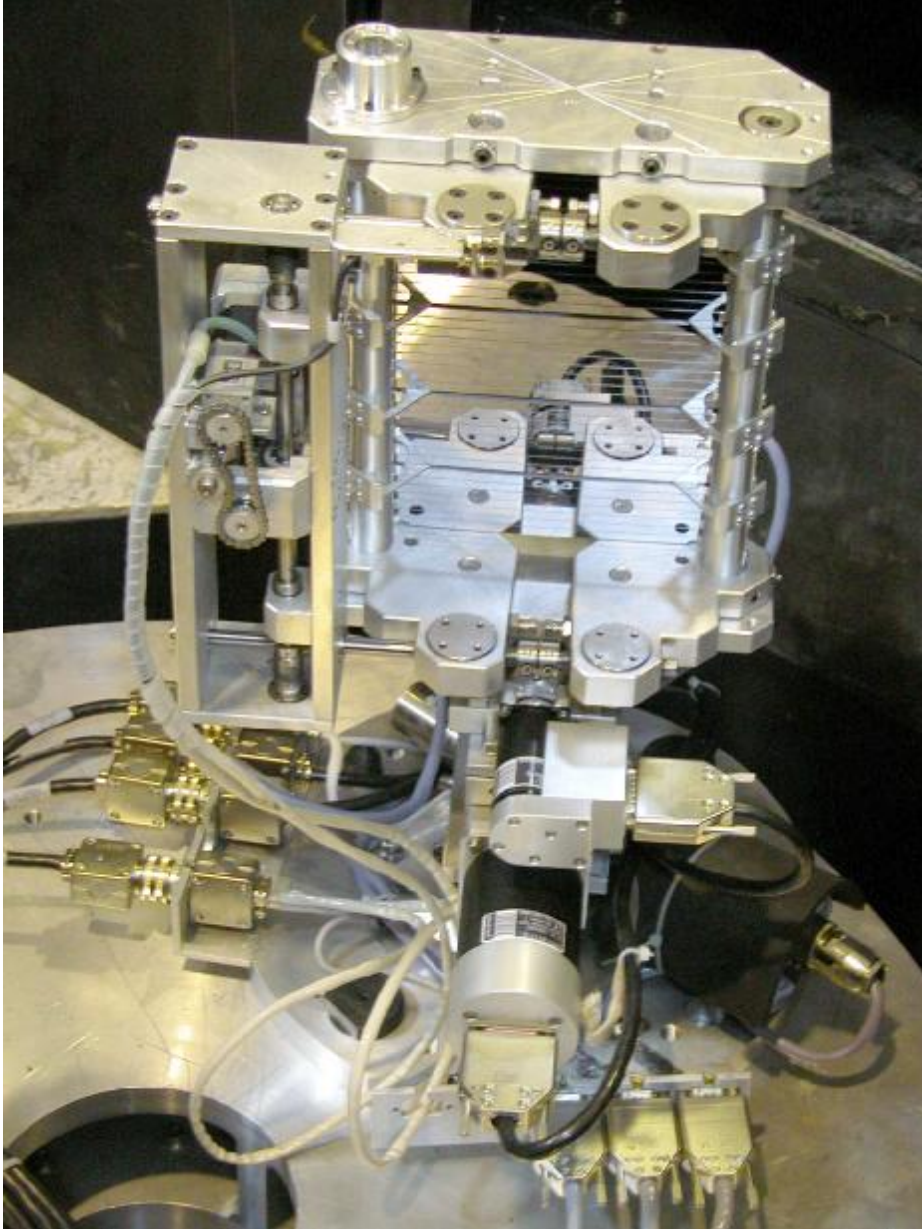
- I Stewart Platform: samples of 1 mm to 1 m, up to 500 kg
- I Variable take off: wavelength range: 0.12 - 0.35 nm
- I Supermirror guide: $m=2$
- I Double focusing, bent Si-wafer monochromator
- I Radial collimators for high lateral resolution
- I Fully automated variable slit system
- I 2D position sensitive detector
- I Sample environment : mirror furnace, stress rig





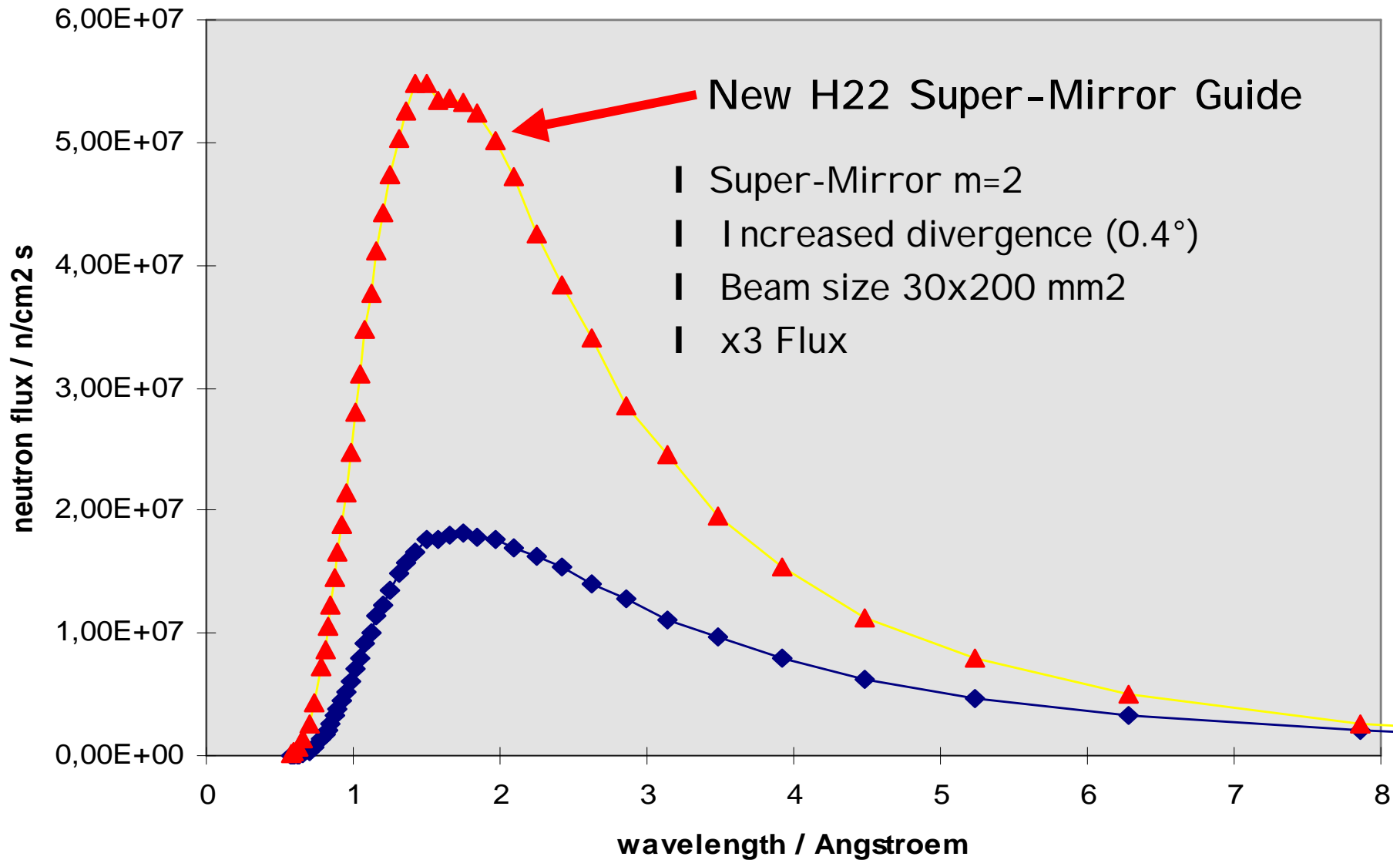
Possible New Monochromators

- | Si perfect crystals, double focusing, variable bending
- | Cu double focusing fixed bending (Residual Stress)
- | Graphite, broad bandwidth, imaging applications



Double-focusing bent Si-monochromator

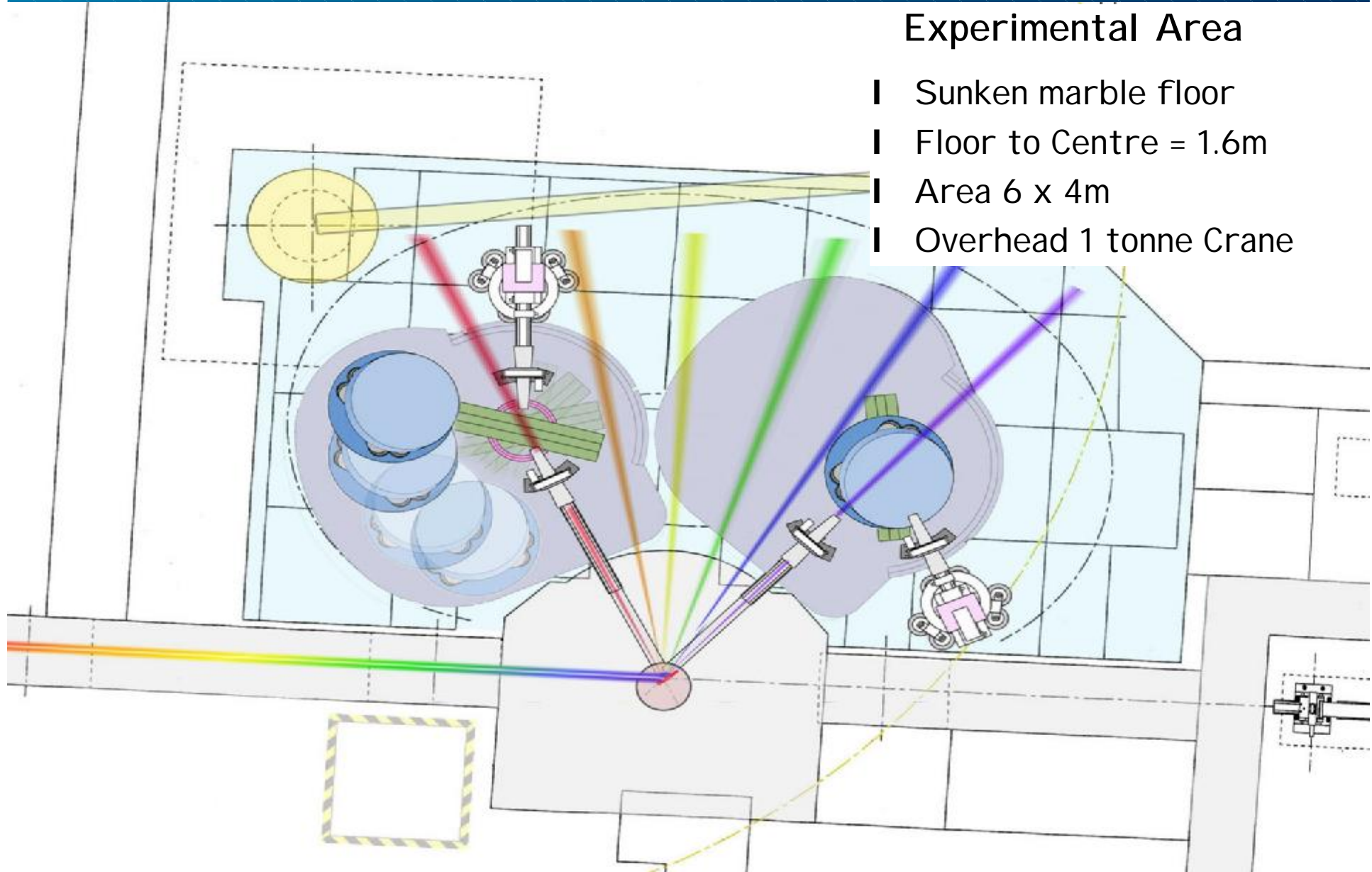
- | Si :180x15x2 mm³ (5 slices)
- | bending radius: 5 - 10 m
- | fixed vertical focus: 1.4 m
- | $D2Q \sim 0.1^\circ\text{-}0.5^\circ$ ($Dd/d \sim 2 \times 10^{-3}$)
- | Take off angle 55-125°
- | Wavelength 1.3-2.4 Å
- | Made by M. Popovici, MURR

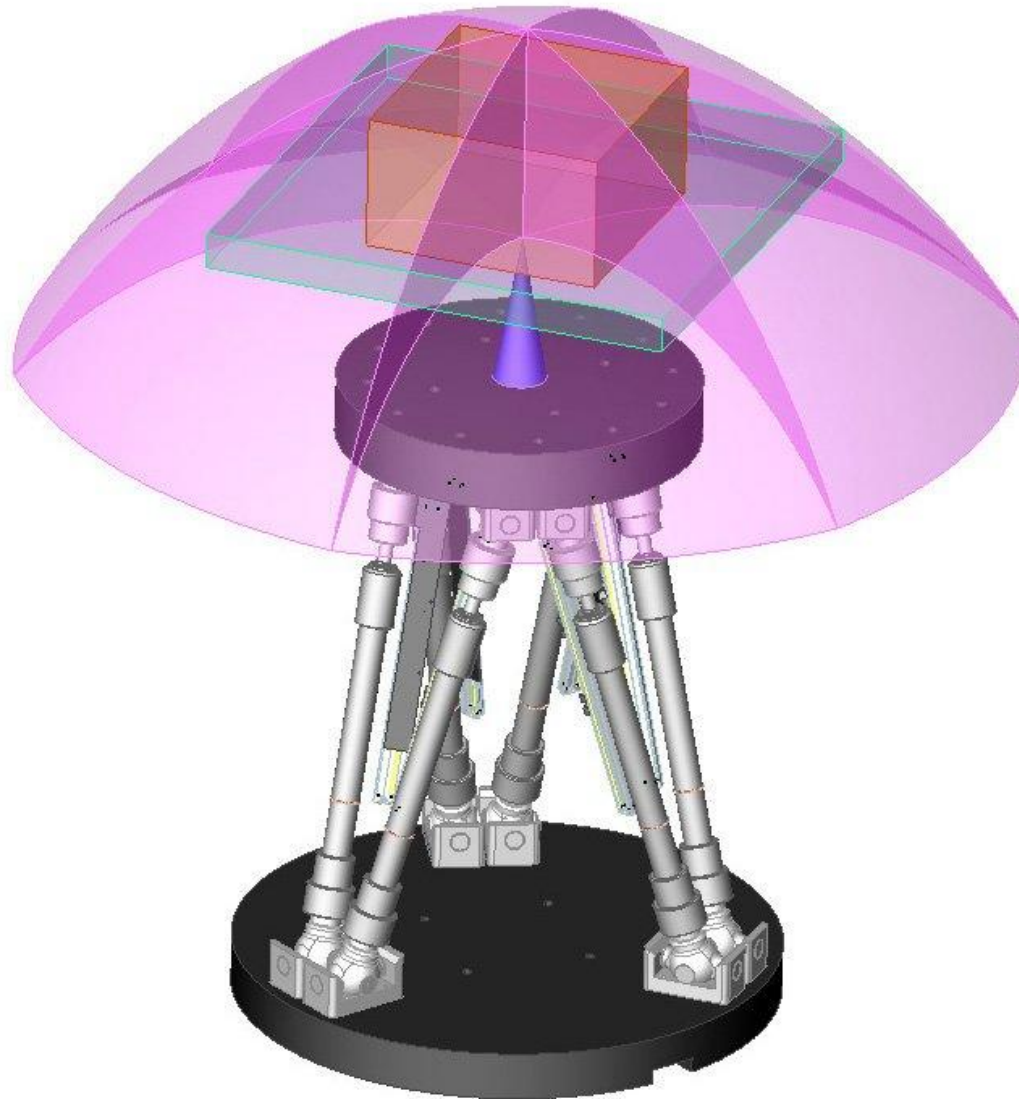




Experimental Area

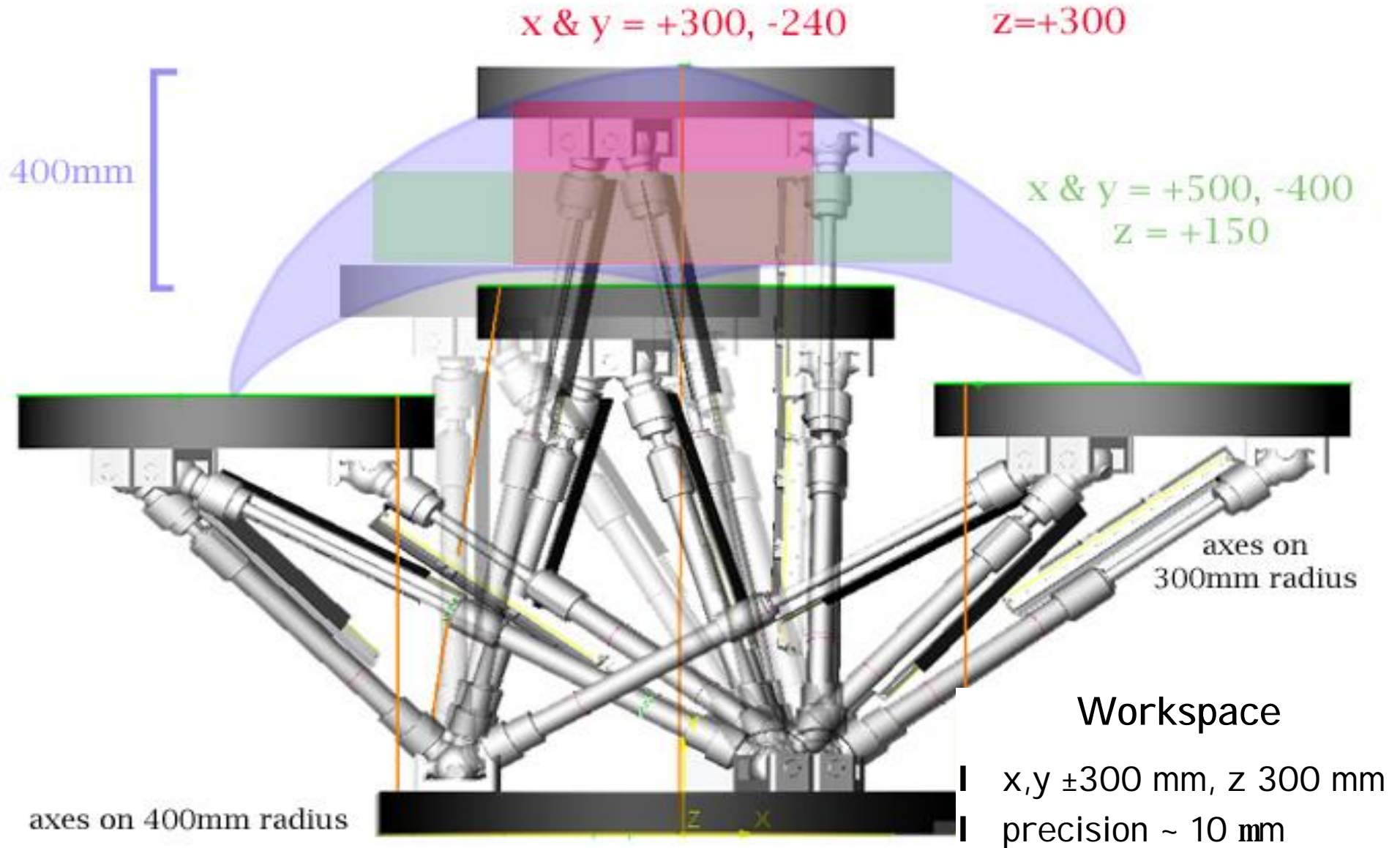
- | Sunken marble floor
- | Floor to Centre = 1.6m
- | Area 6 x 4m
- | Overhead 1 tonne Crane

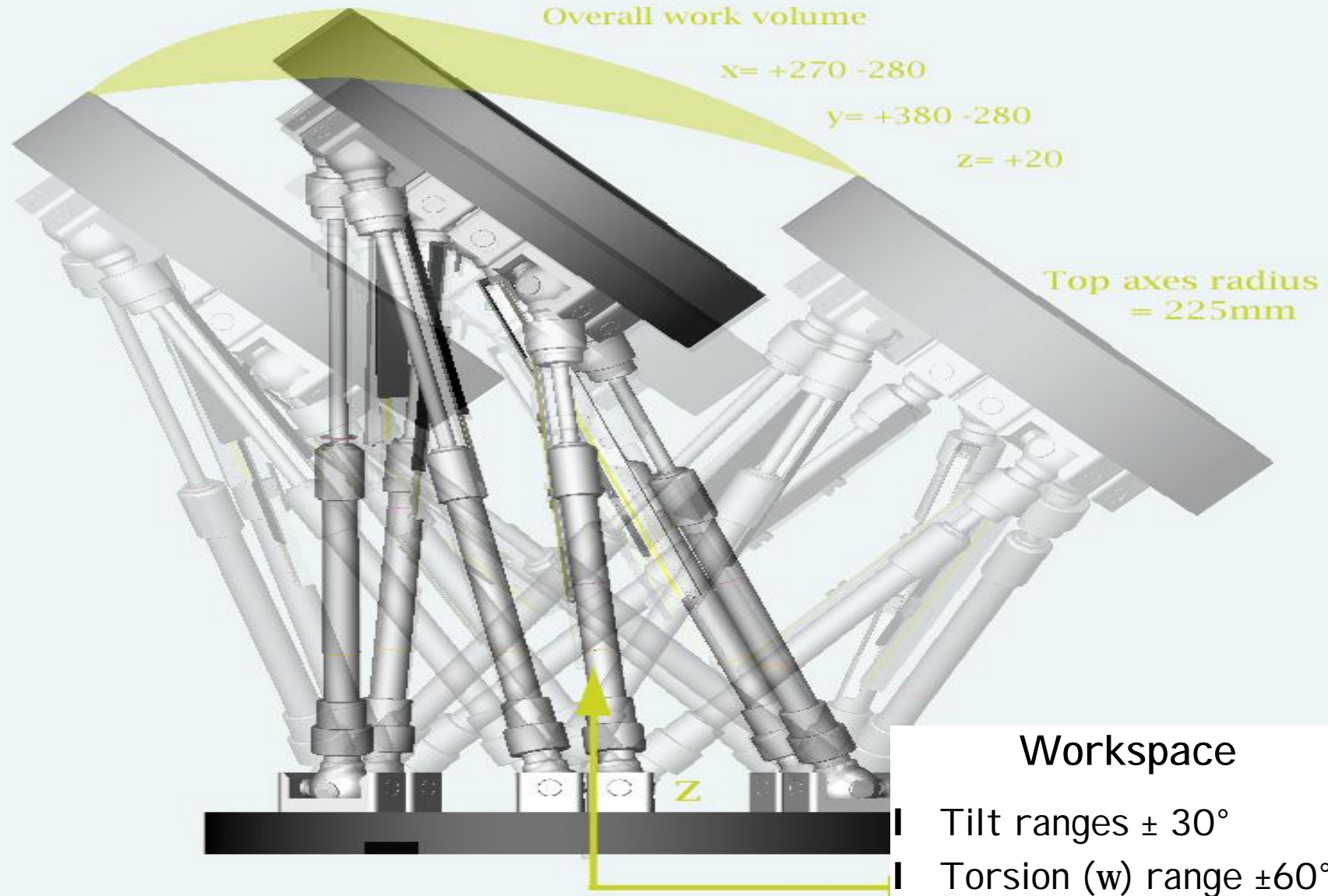




Sample Stage

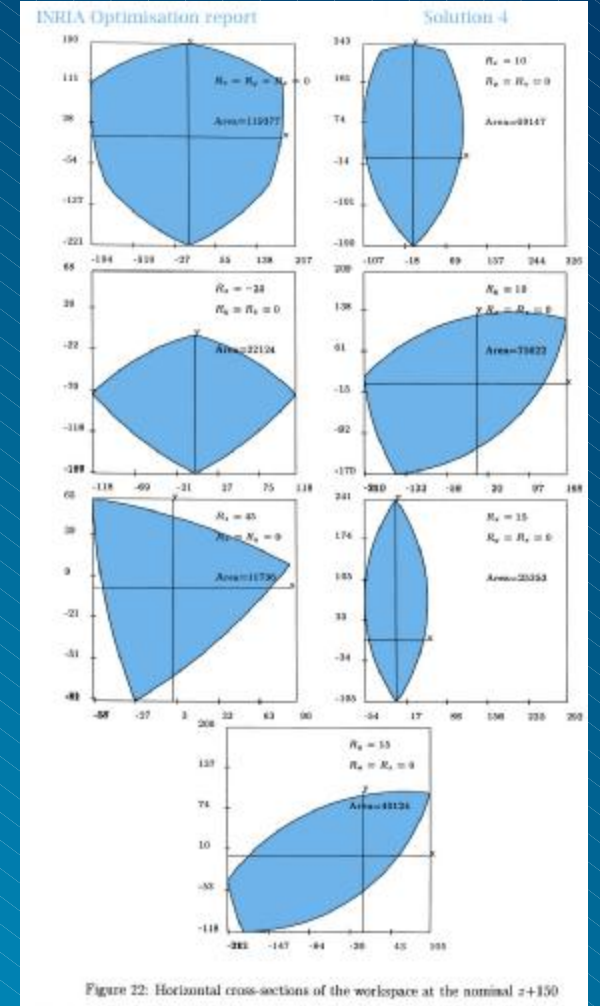
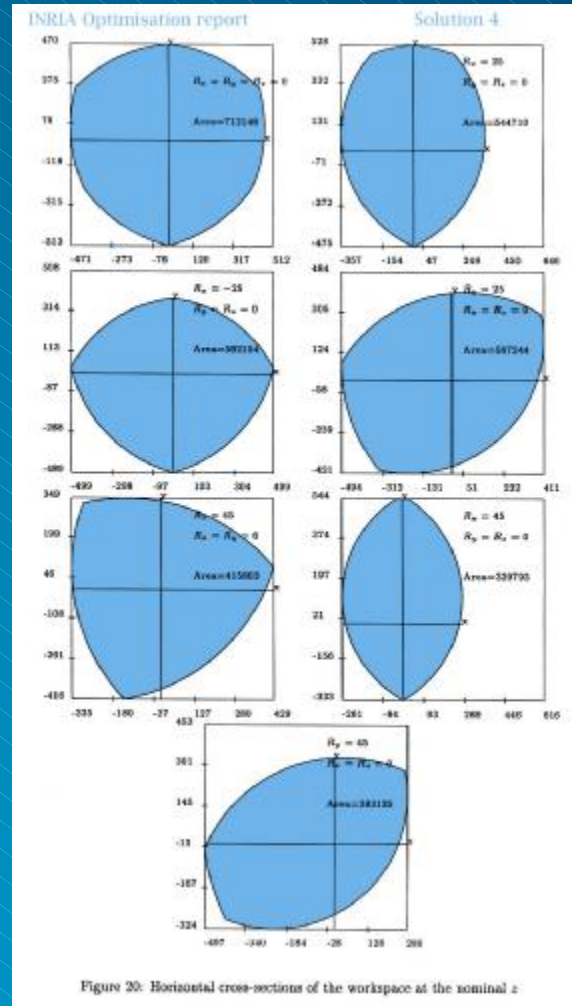
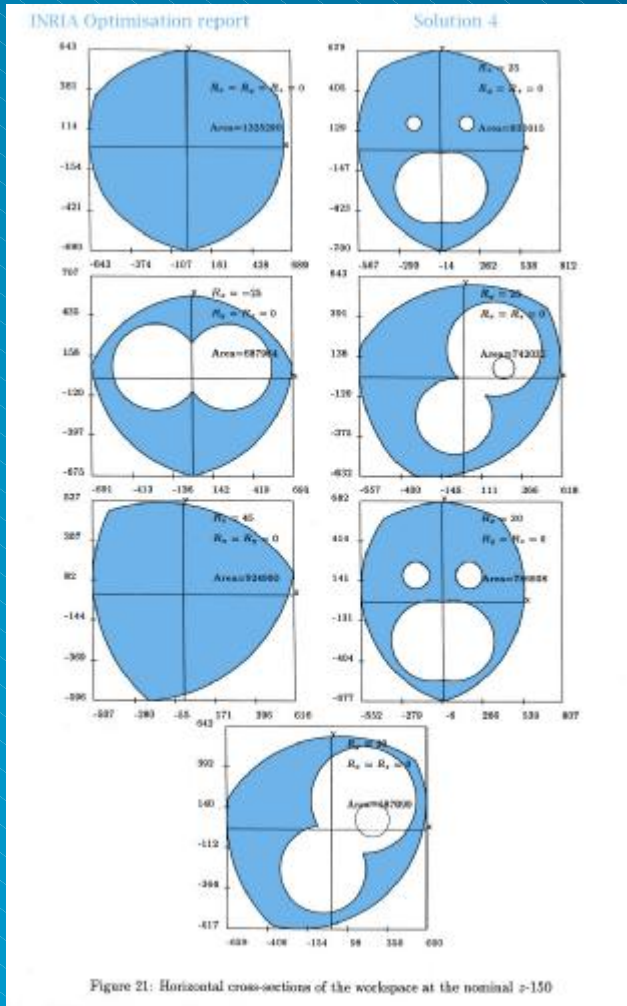
- | Stewart platform (Hexapod)
- | High flexibility
- | Laser/Camera system
- | Max. load 500 kg
- | Air pads







Hexapod Optimisation study, INRIA Sophia-Antiopolis





Detector

- | 2D, micro-strip area detector, 80x80 mm²
- | 2θ range: 0 - 130°
- | variable distance to sample (to change resolution)

Instrument Control/Analysis

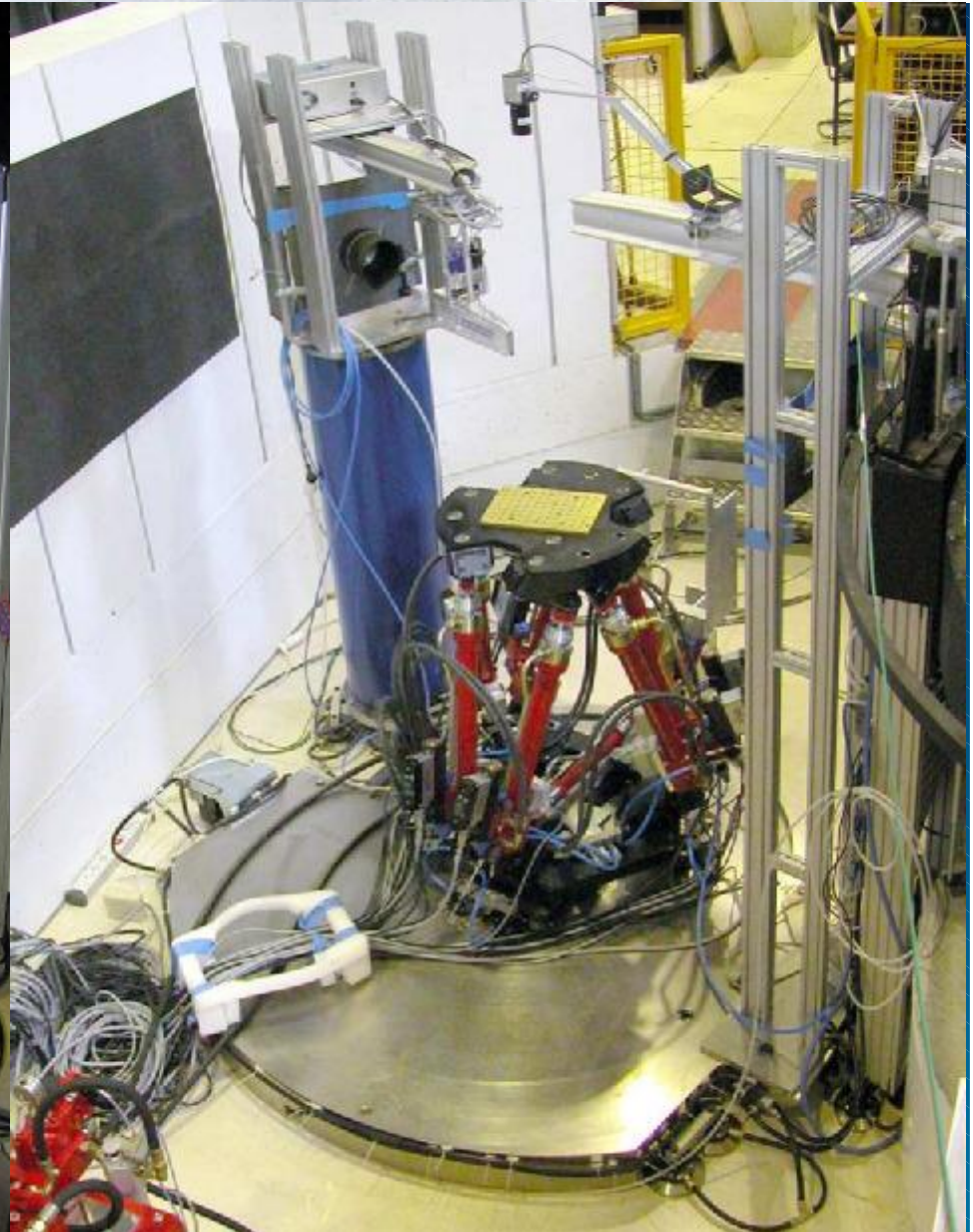
- | Embedded control for the Hexapod (PCI card or PC)
- | MAD-IDL for interface with motor controls (standard ILL)
- | Matlab/IDL for Data Analysis

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