

TMO - A new soft X-ray beamline at LCLS II

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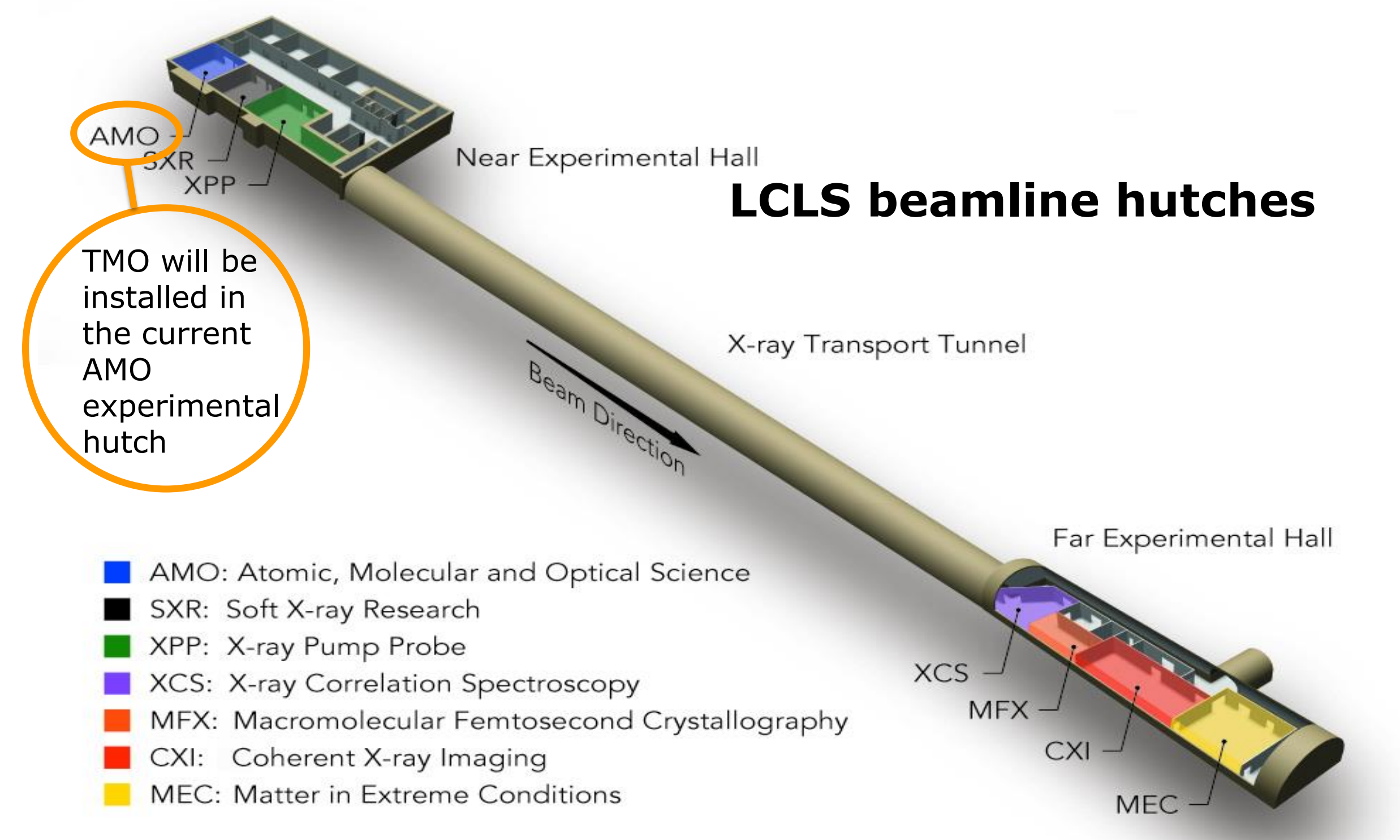
JC Castagna, L. Amores, M. Holmes, J. James, T. Osipov, P. Walter

Acknowledgments:

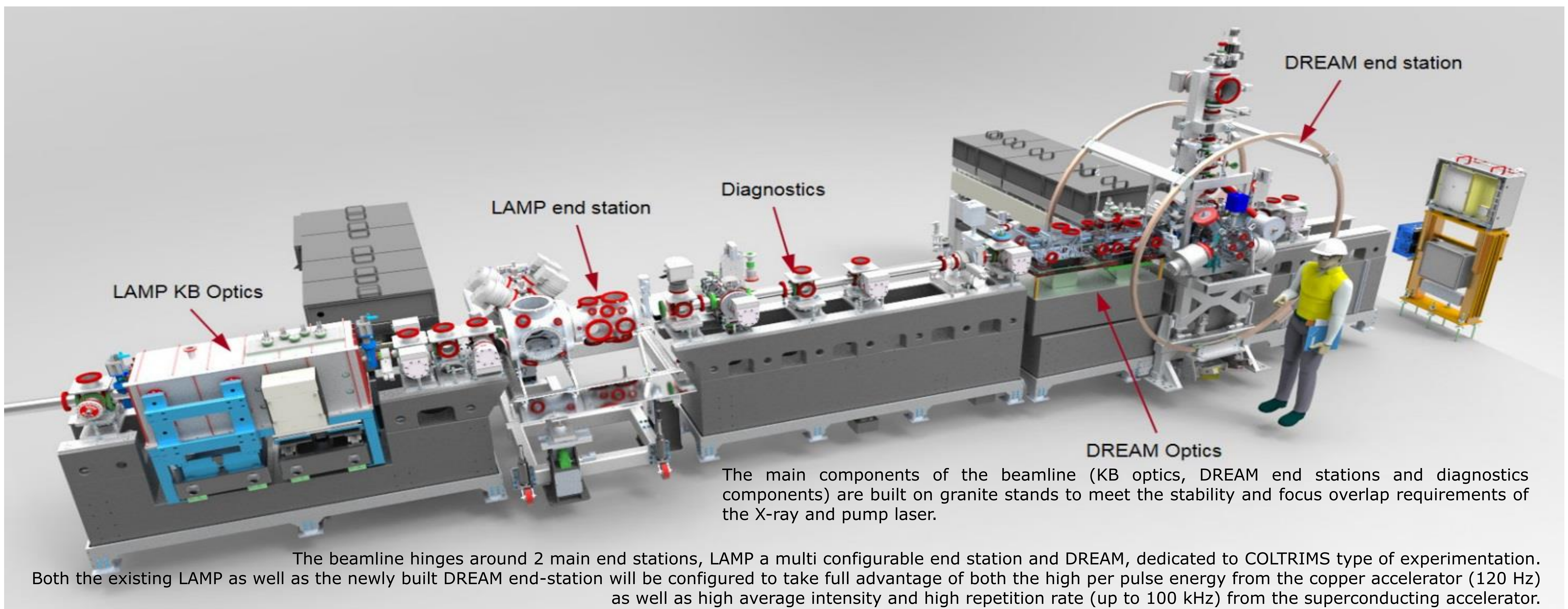
Georg Gassner, Lin Zhang, Daniele Cocco, Danny Morton

LCLS is building a set of 4 new soft X-ray beamlines to take the advantage of LCLS-II upgrade with high repetition rate and new undulators. The TMO (Time resolved Molecular Optical science) beamline also known as NEH 1.1 will support many experimental techniques not currently available at LCLS.

First light on TMO is expected in February 2020

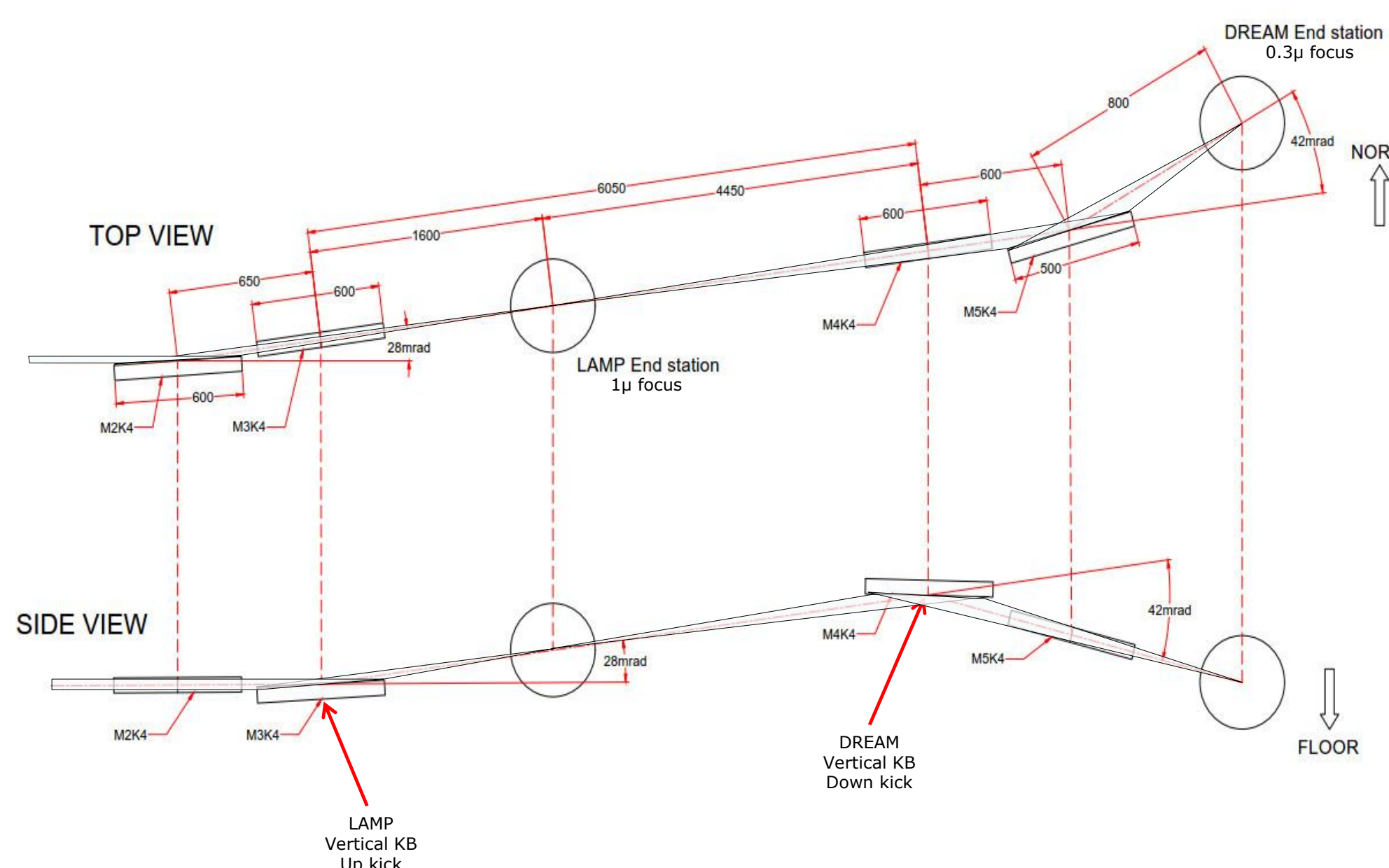
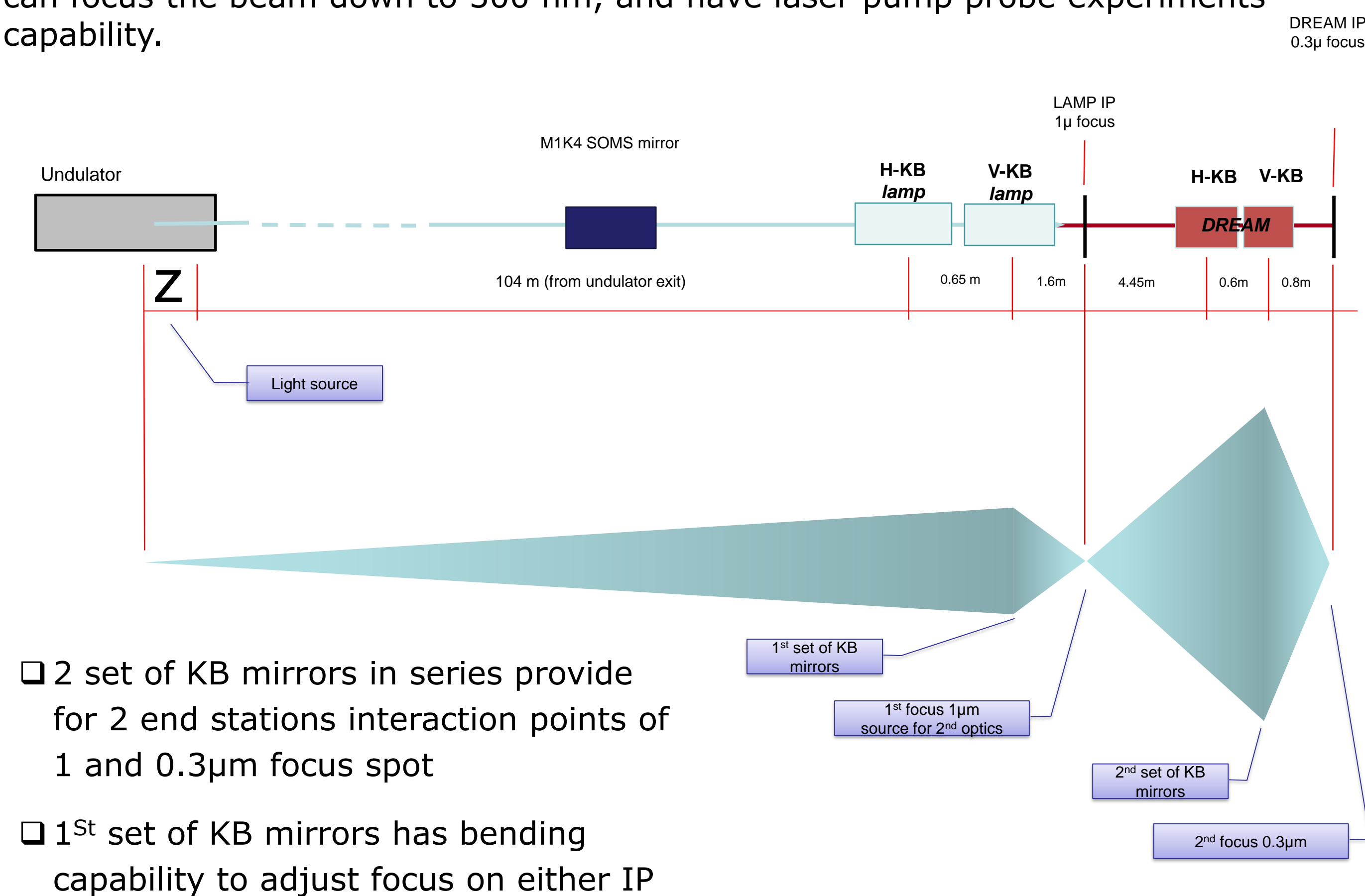


TMO beamline layout and End Stations



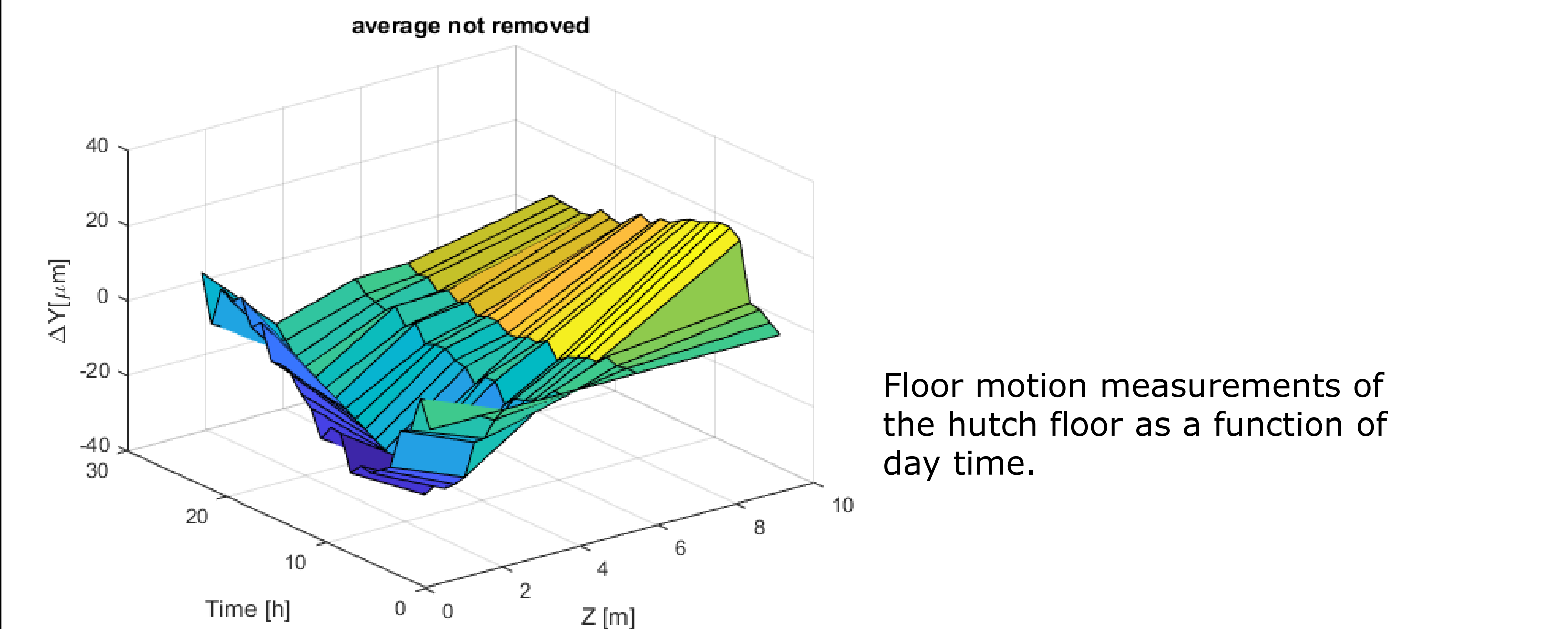
TMO optic systems

Each end station will have its own focusing optic systems (KB Mirrors) which can focus the beam down to 300 nm, and have laser pump probe experiments capability.



Building thermal stability

The thermal stability of the building itself has a direct impact on beam stability. External shifts of temperature have directly been measured as floor deviation in the sub-basement of the building where the beamline is installed. Variations of up to 30μ have been measured on the floor flatness and horizontality. In order to meet our very demanding requirements the part of the building that is directly exposed to climate and solar radiation is being thermally insulated to reduce thermal expansion



Vacuum profile

