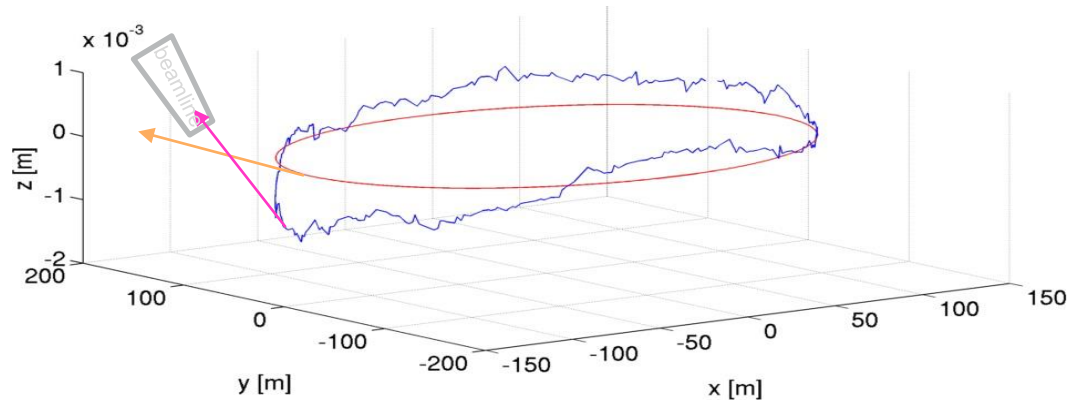




Replacing an existing storage ring: the actual position or “zero”

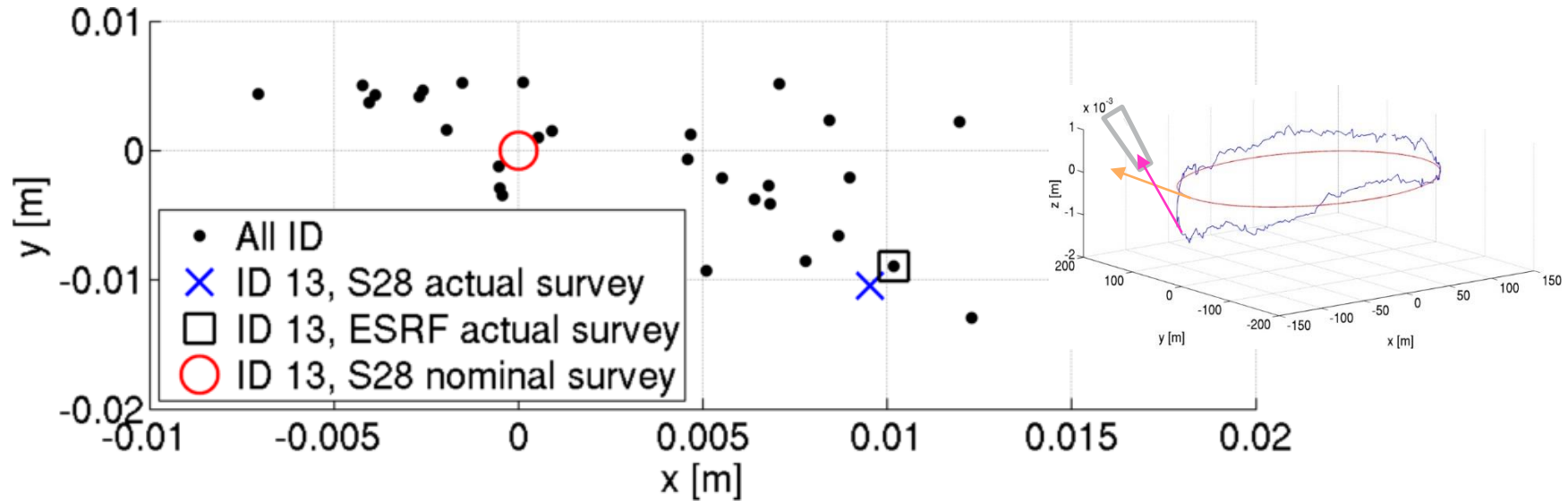
Upgrade of an existing synchrotron light source requires to dismantle and reinstall the accelerator in the same tunnel.



WHERE SHOULD THE NEW ACCELERATOR BE POSITIONED?

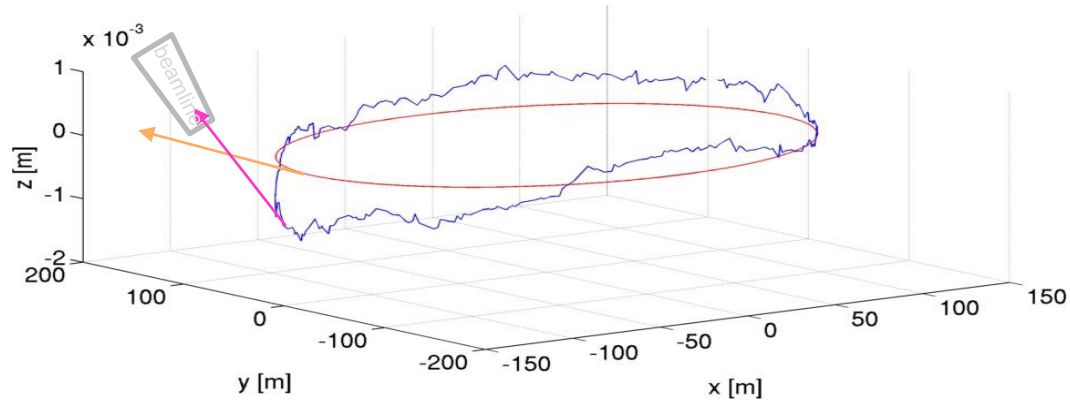
1. On the zero position (~circle)
2. On the current position (distorted)
3. On the latest position after realignment of all the accelerator and beamlines to zero with beam.

X-RAY BEAM POSITION AT ID (60 METERS)



10 seeds	D. Aperture [mm]	T.Lifetime [h]	Inj.Eff. [%]
No errors	-13	45.1	100
Nominal	-11.3+/-0.3	41.1+/-1.6	100
Actual	-11.3+/-0.3	32.3+/-0.7	100
Random	-10.9+/-0.8	26.1+/-2.1	99.5+/-0.8

The installation of a new lattice



1. On the zero position (~circle) large correction, more difficult realignments
2. On the current position (distorted) small corrections, lifetime affected
3. On the latest position after realignment of all the accelerator and beamlines to zero with beam. Years before (now), better lifetime