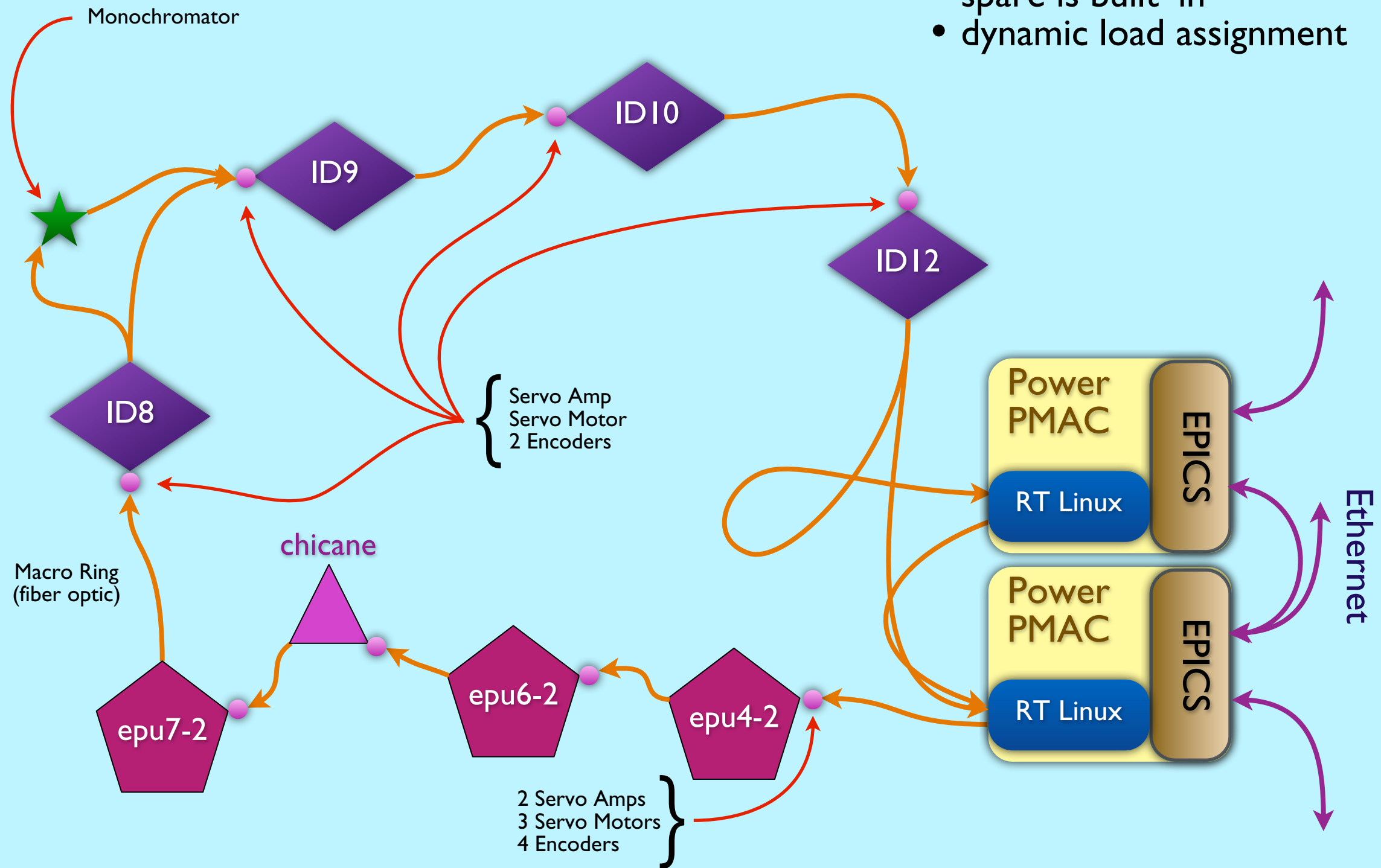


Motorized Insertion Device Control at ALS

Power PMAC Configuration

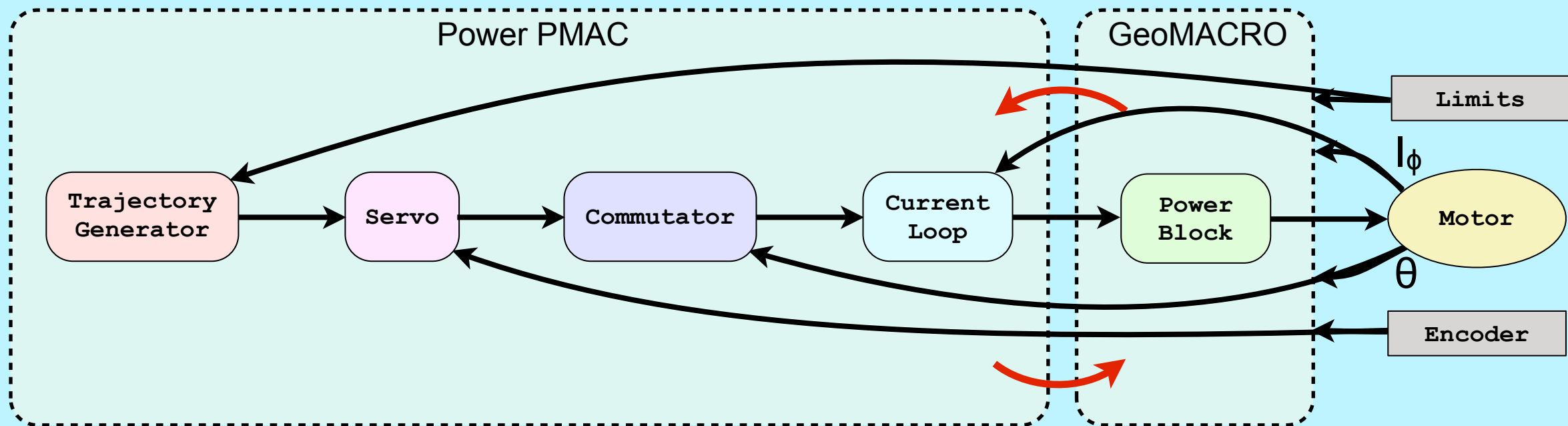
2

- spare is built-in
- dynamic load assignment



Controller / Amplifier

3



- The PMAC family of products provides components which distribute these functions in a variety of ways
- For ALS insertion device control, the PowerPMAC controller and GeoMACRO servo driver have been selected
- The Power PMAC and GeoMACRO are communicate via a fiber optic token ring, so may be located independently
- All motor connections (power, encoder, limit switches) are local, connected to the GeoMACRO which is mounted on the ID

Geo MACRO Drive

4

Rotary sin-cos
&
absolute encoders

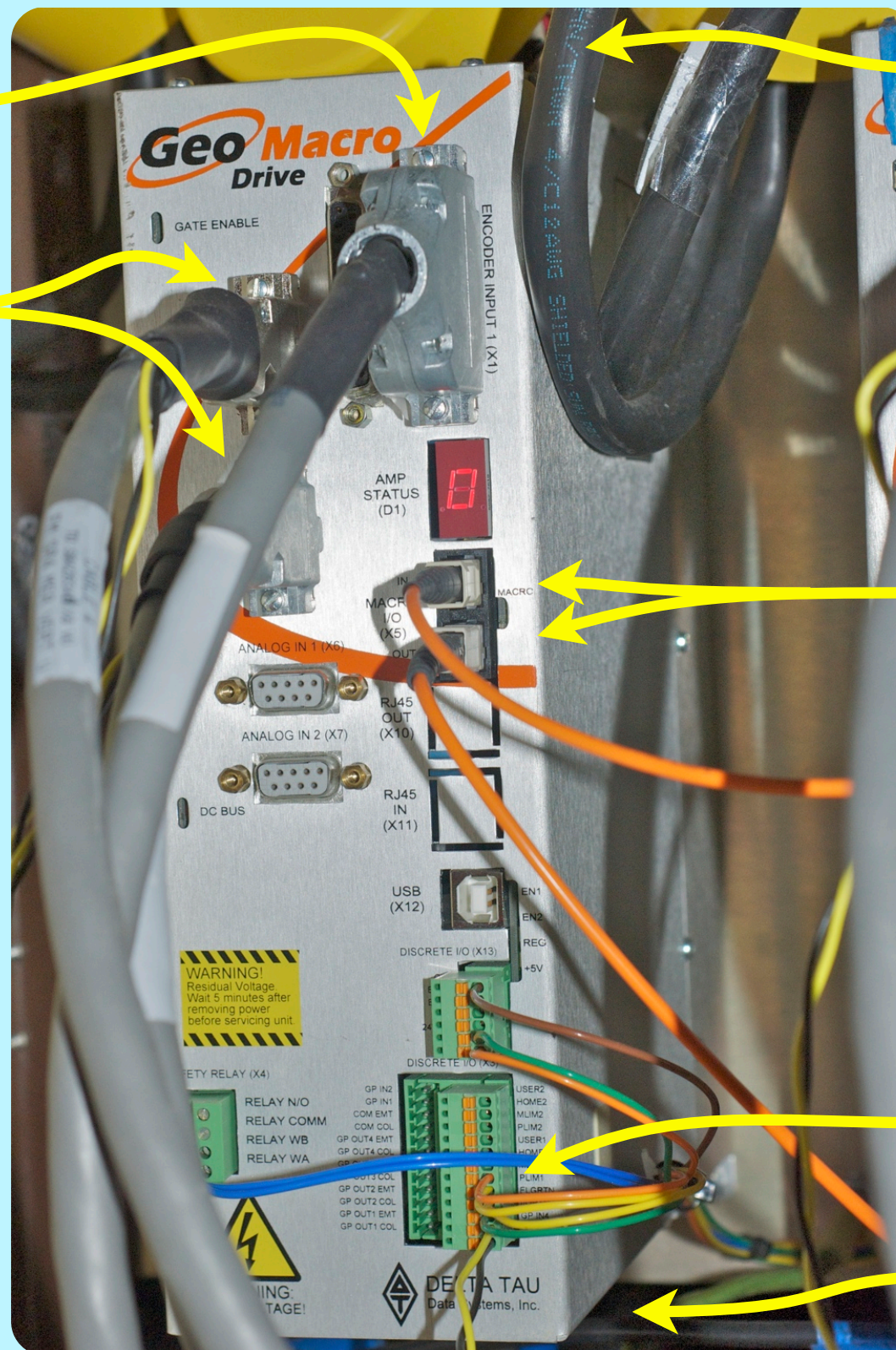
linear encoders

motor power

MACRO ring

limit switches

208 V 3 ϕ
24 VDC



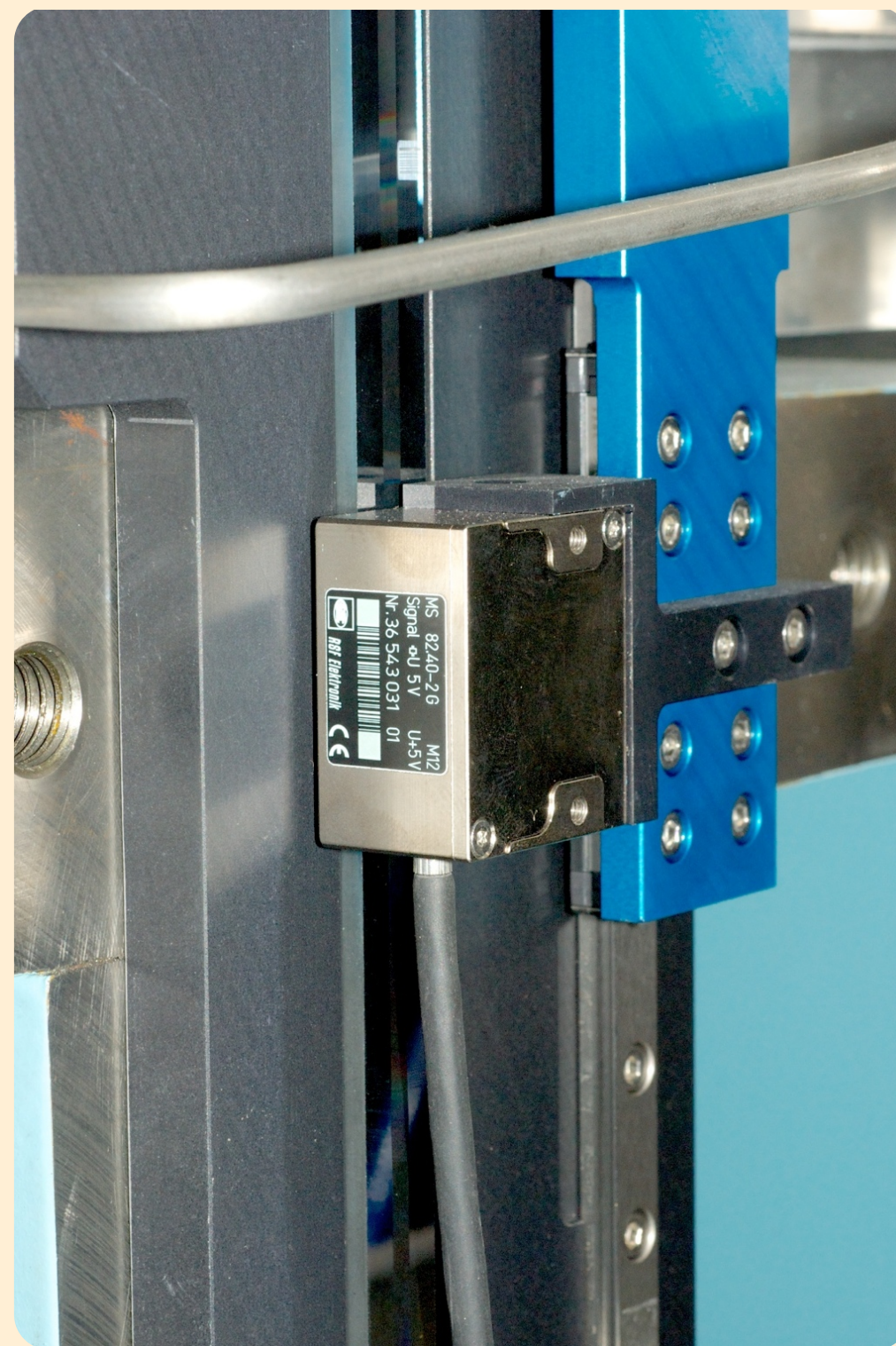
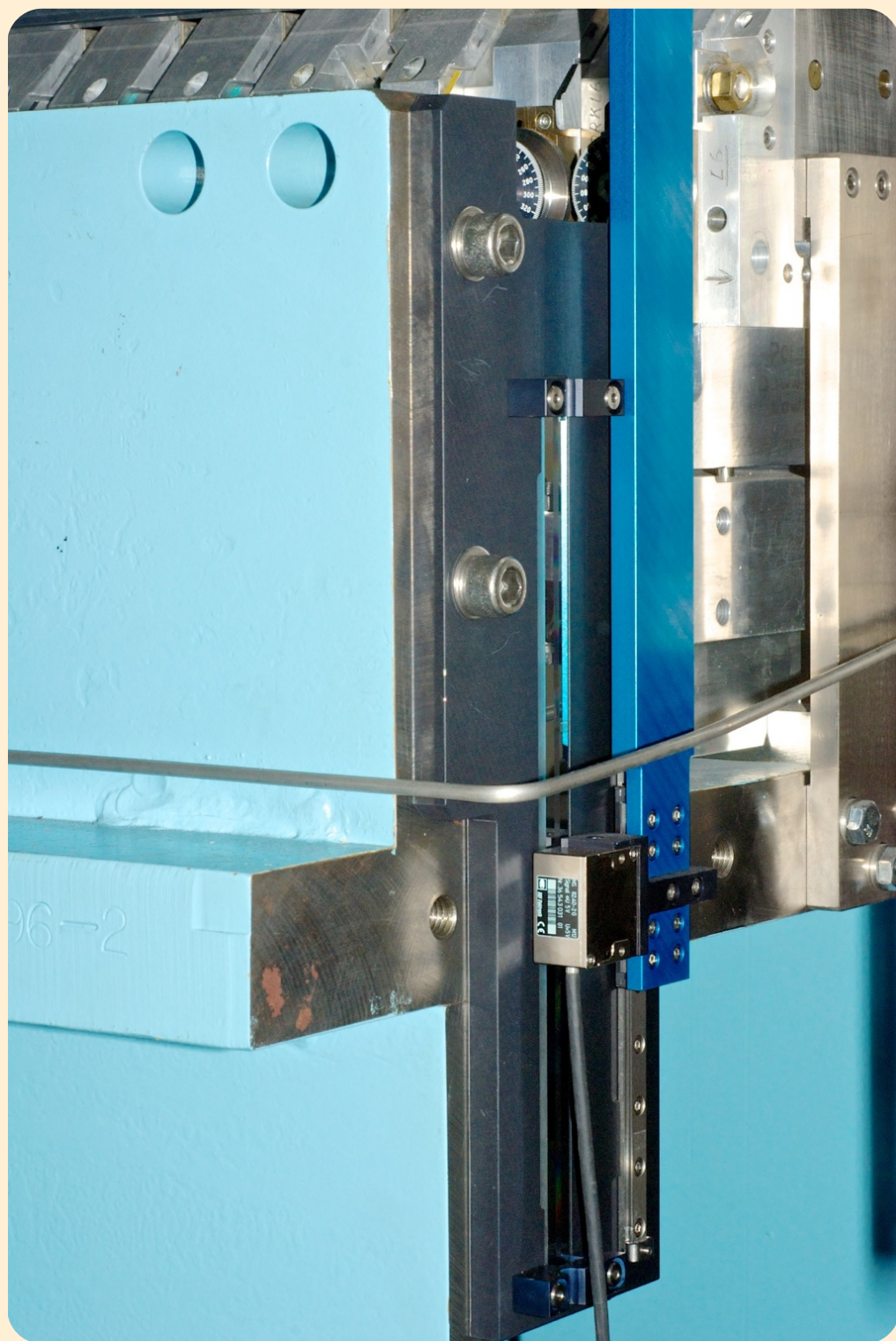
fiber panel

5



Glass Scale

6



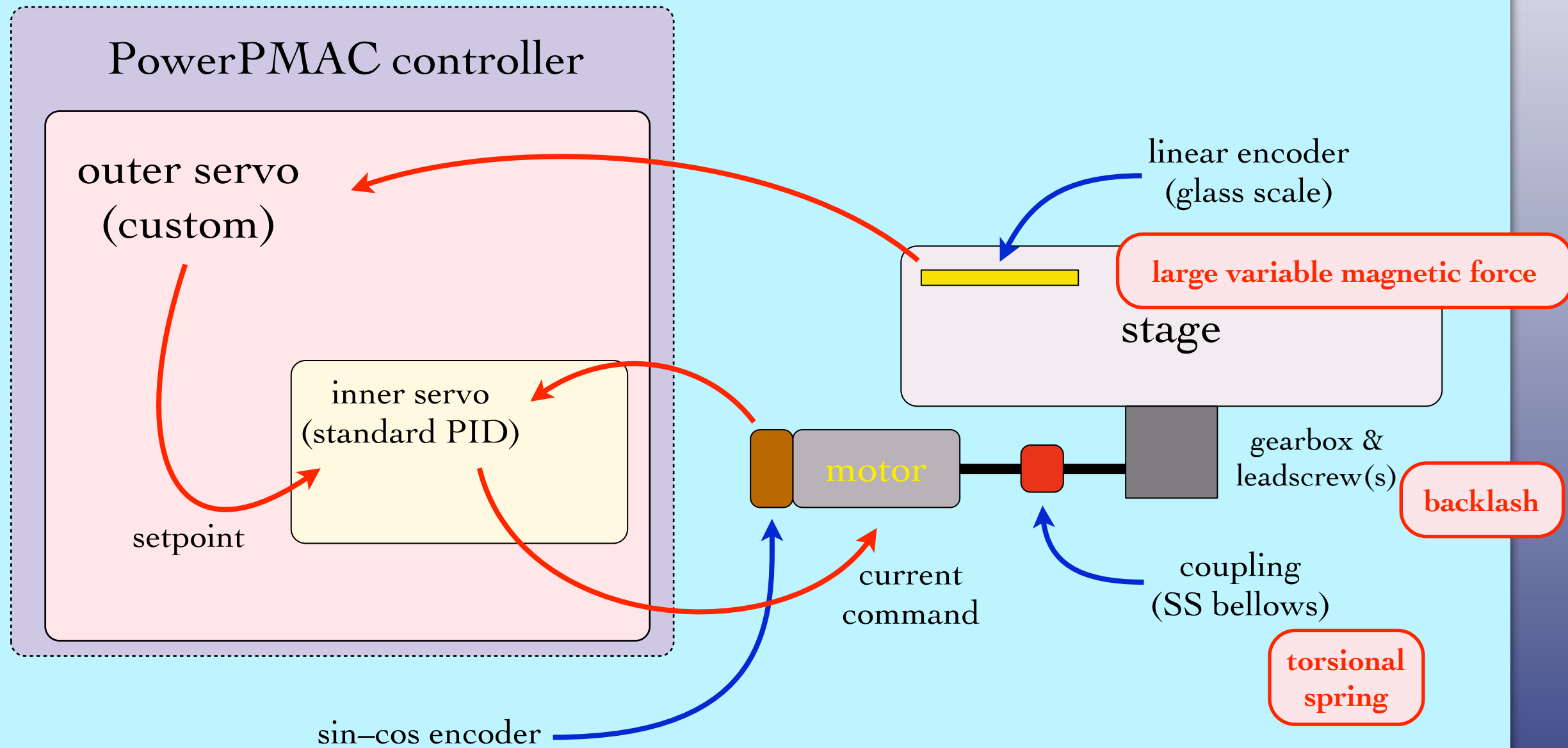
Encoders

7

		Absolute (motor)	Rotary (motor)	Linear (stage)
Type		Endat	Sin-Cos	Quadrature
Resolution (nm)	V	EPU: 19.5312 StdU: 16.2752	EPU: 2.4414 StdU: 0.5086	25 (2 encoders per stage)
	H	48.8280	6.1035	50

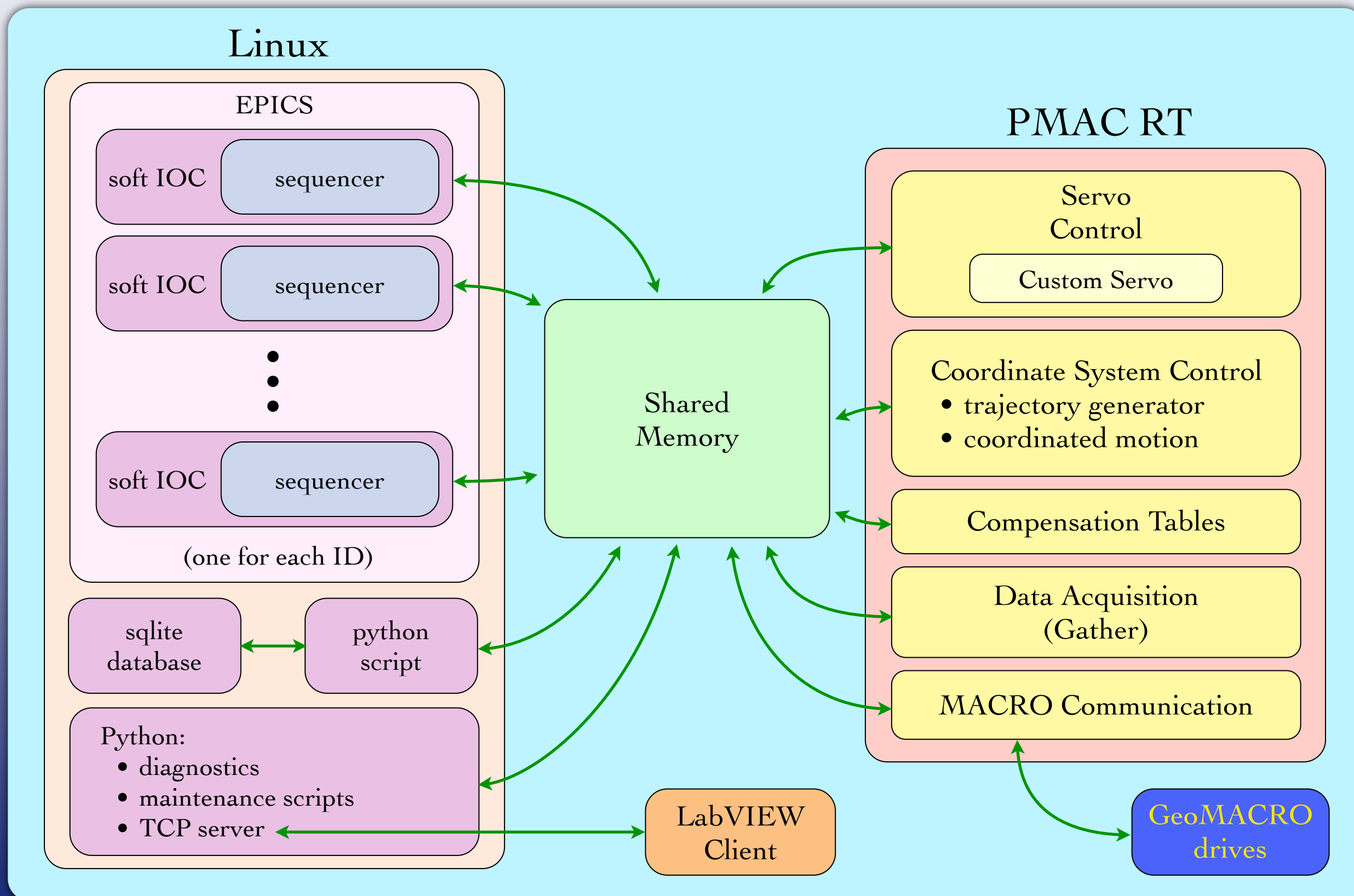
Motor/Stage Control

8



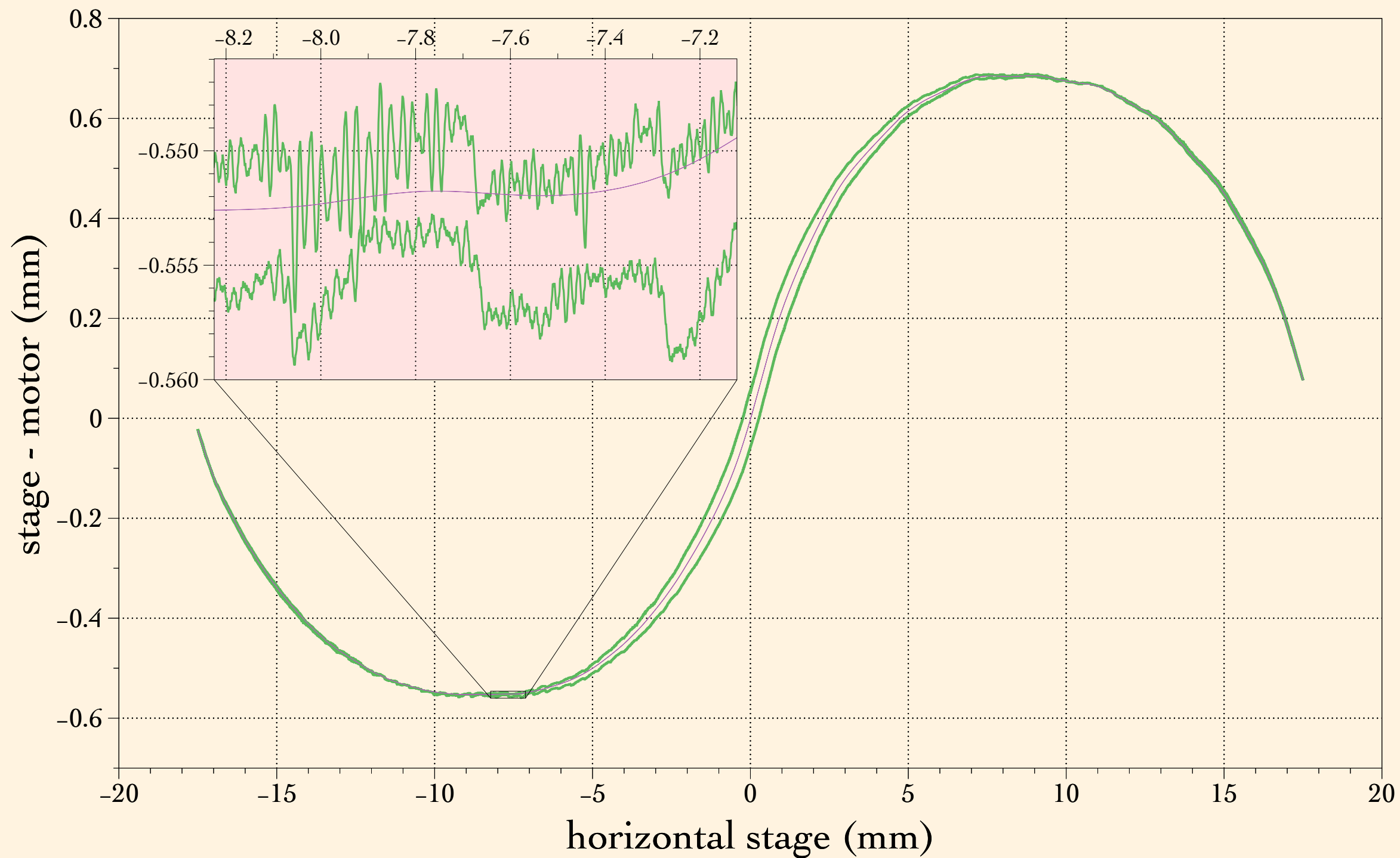
PPMAC Software Configuration

9



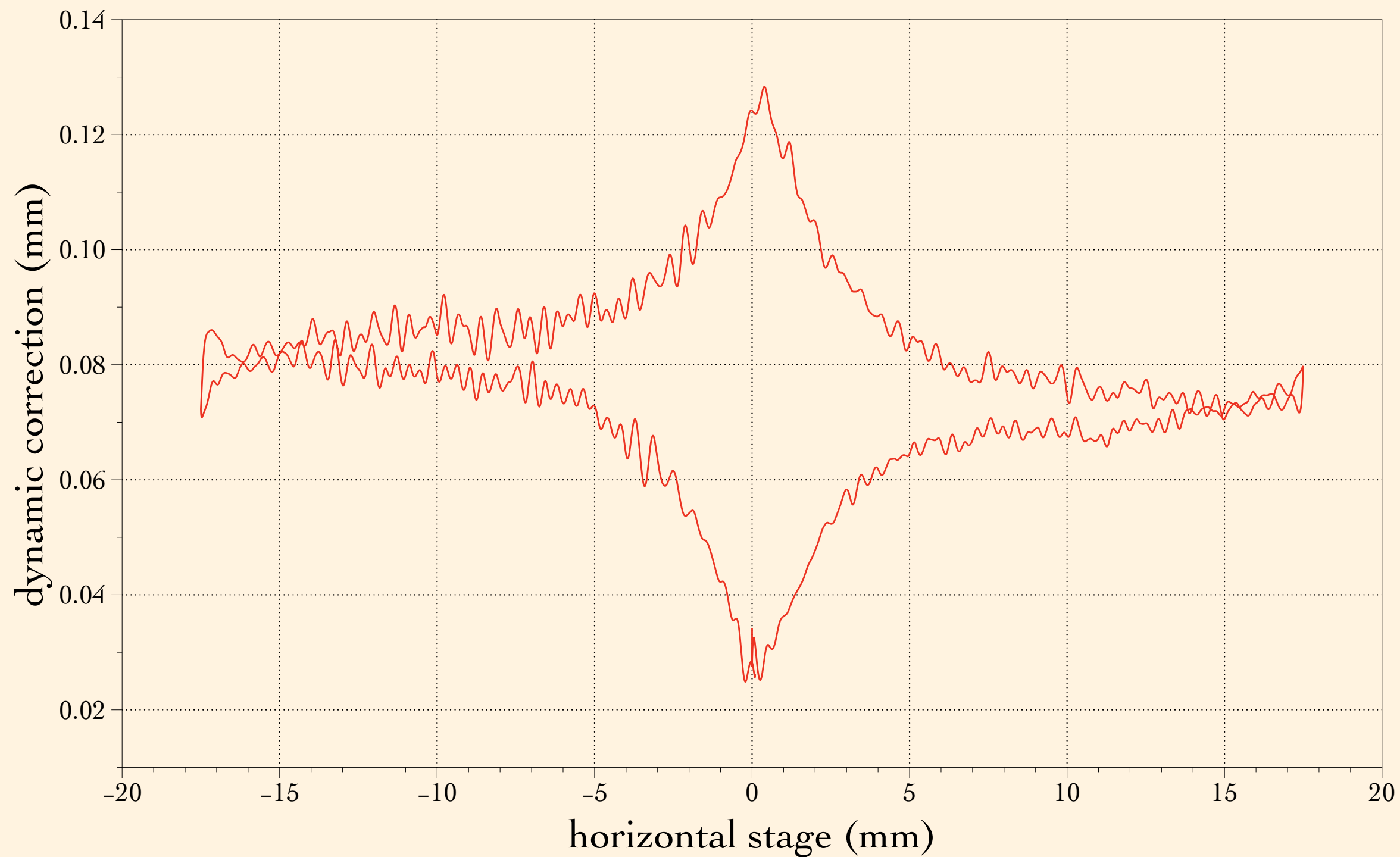
Horizontal Stage

IO



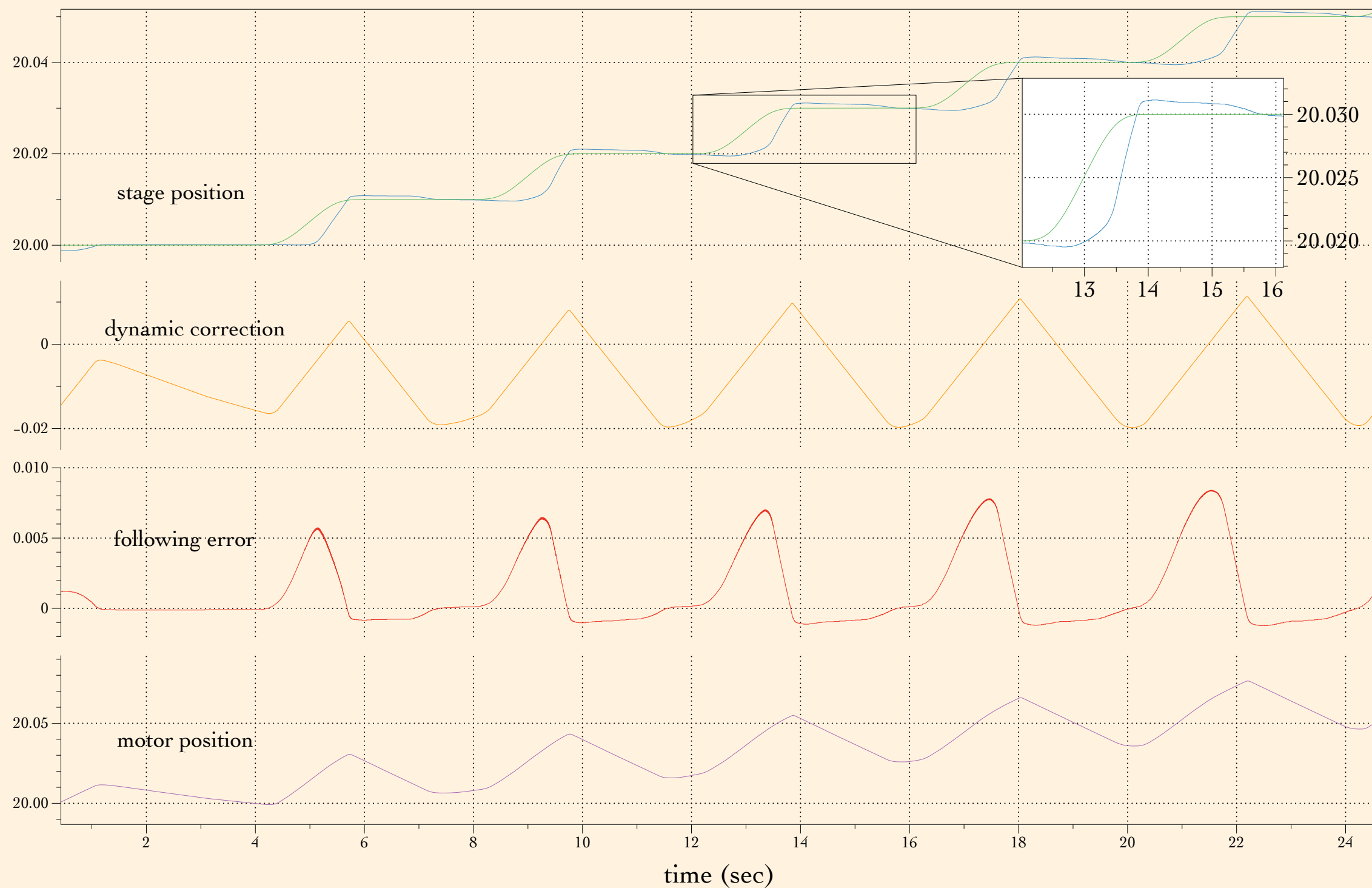
Horizontal Stage

II



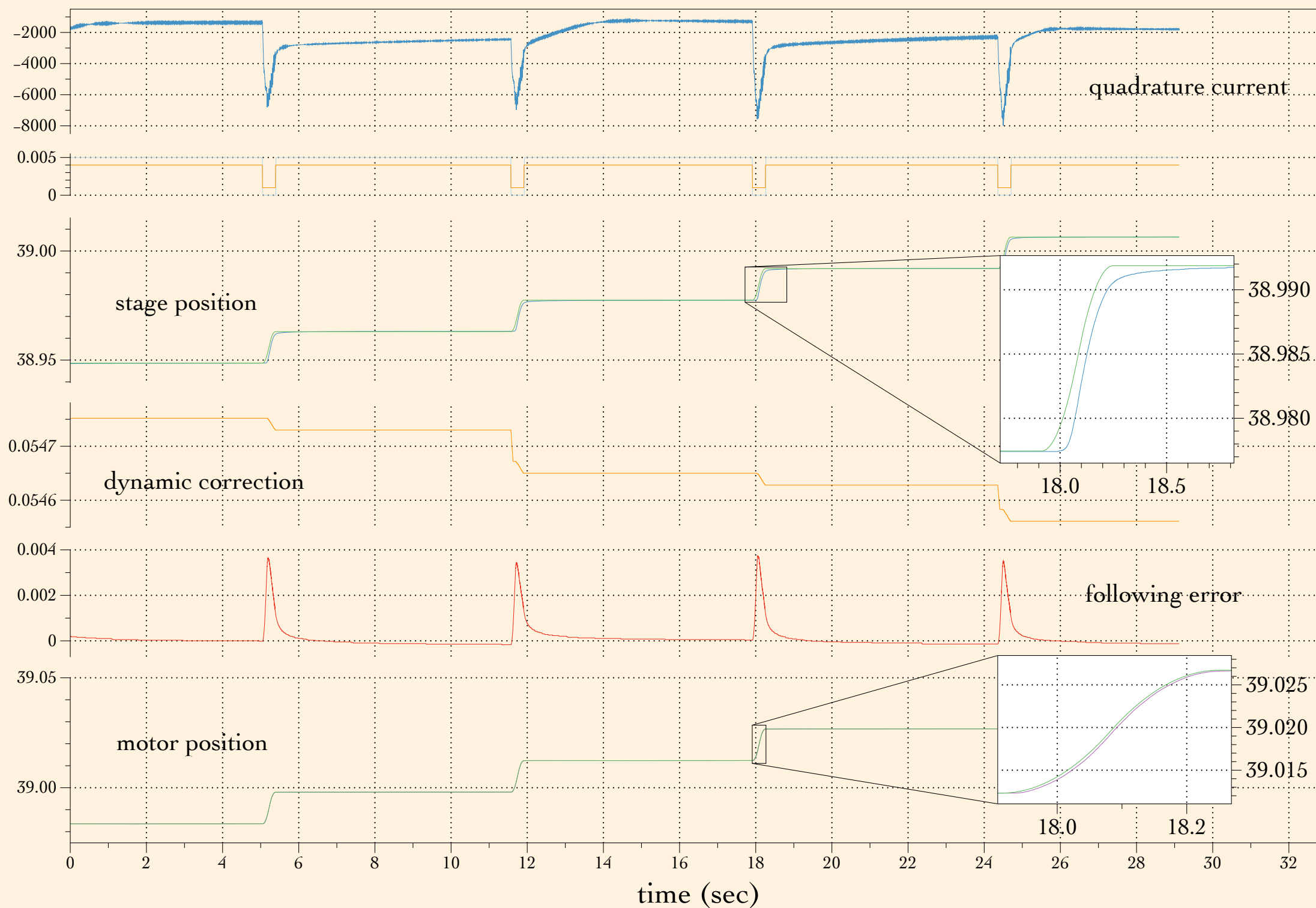
Small Steps

I2



Small Steps

I3



I^2t fault

I4

