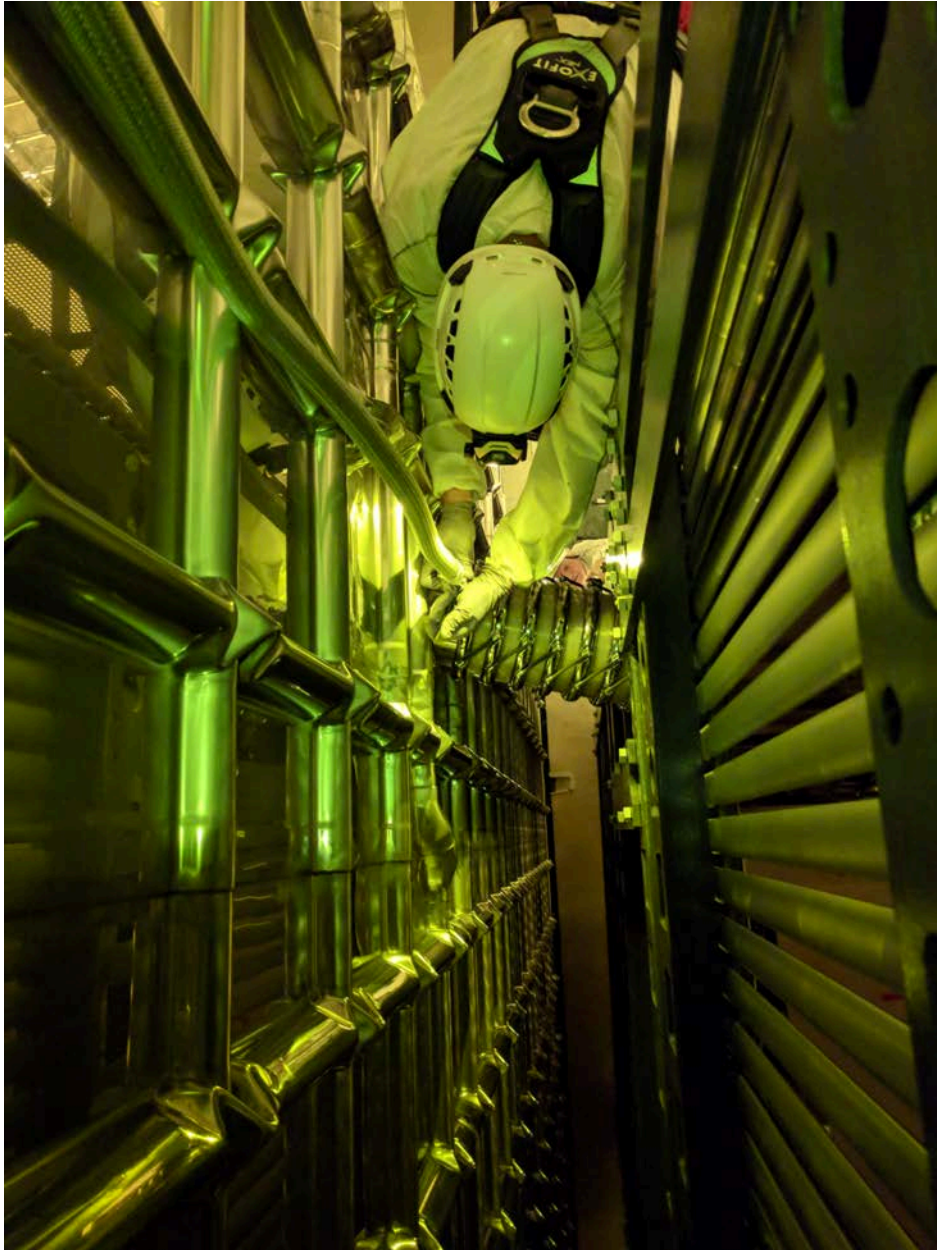


Beam Plug Installation Status in EHN1

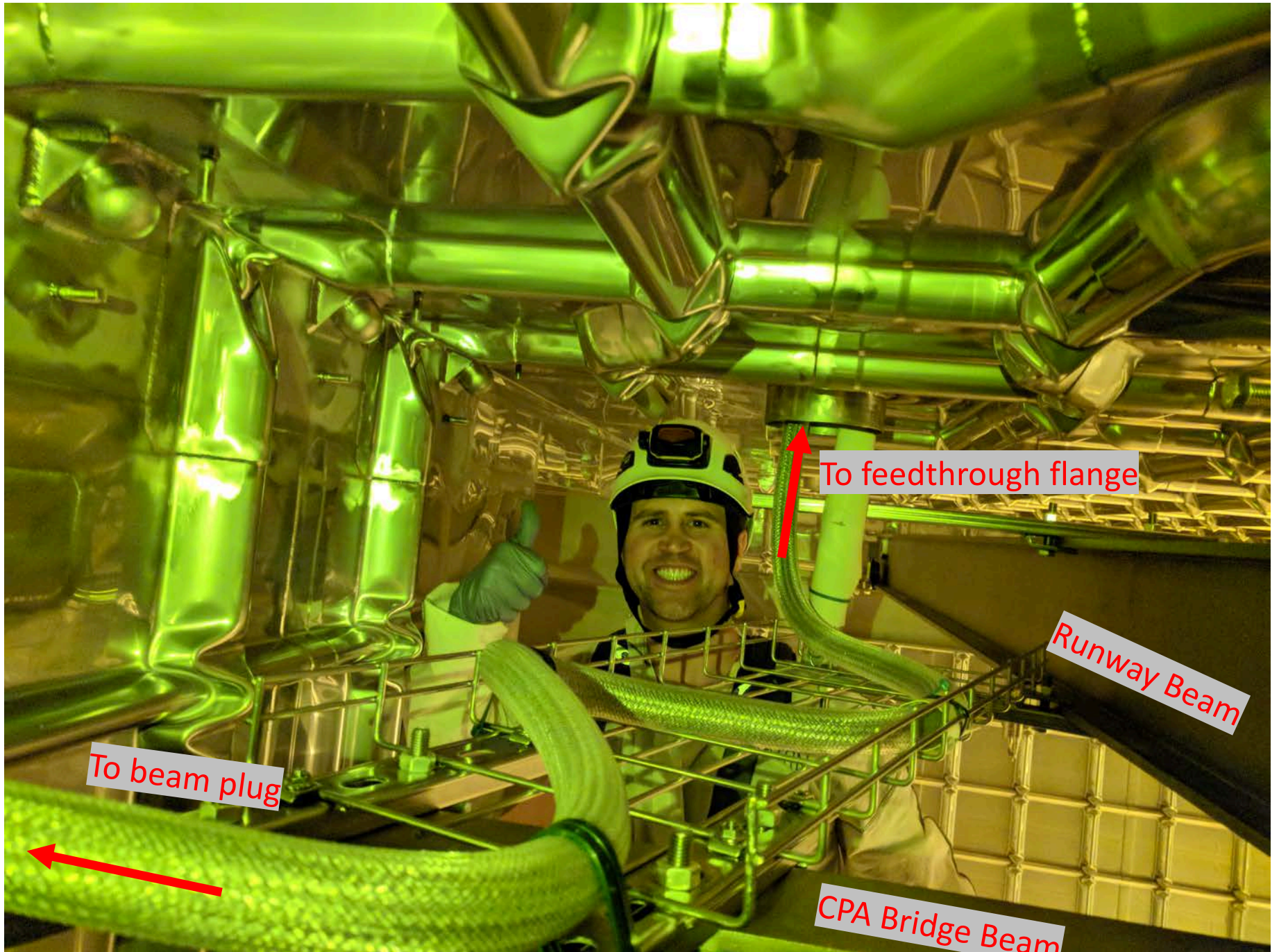
Cheng-Ju Lin
15-March-2018

ProtoDUNE-SP ITI Meeting

Beam Plug Cable Tray



- Beam plug cable tray installed on top of runway beam and bridge beam C
- For strain relief and routing the ~5m long stainless steel nitrogen hose from the feedthrough flange to the beam plug
- Had to disconnect the hose from the beam plug to remove a twist in the hose
- Thanks to Cole and Jerry for their help



To beam plug

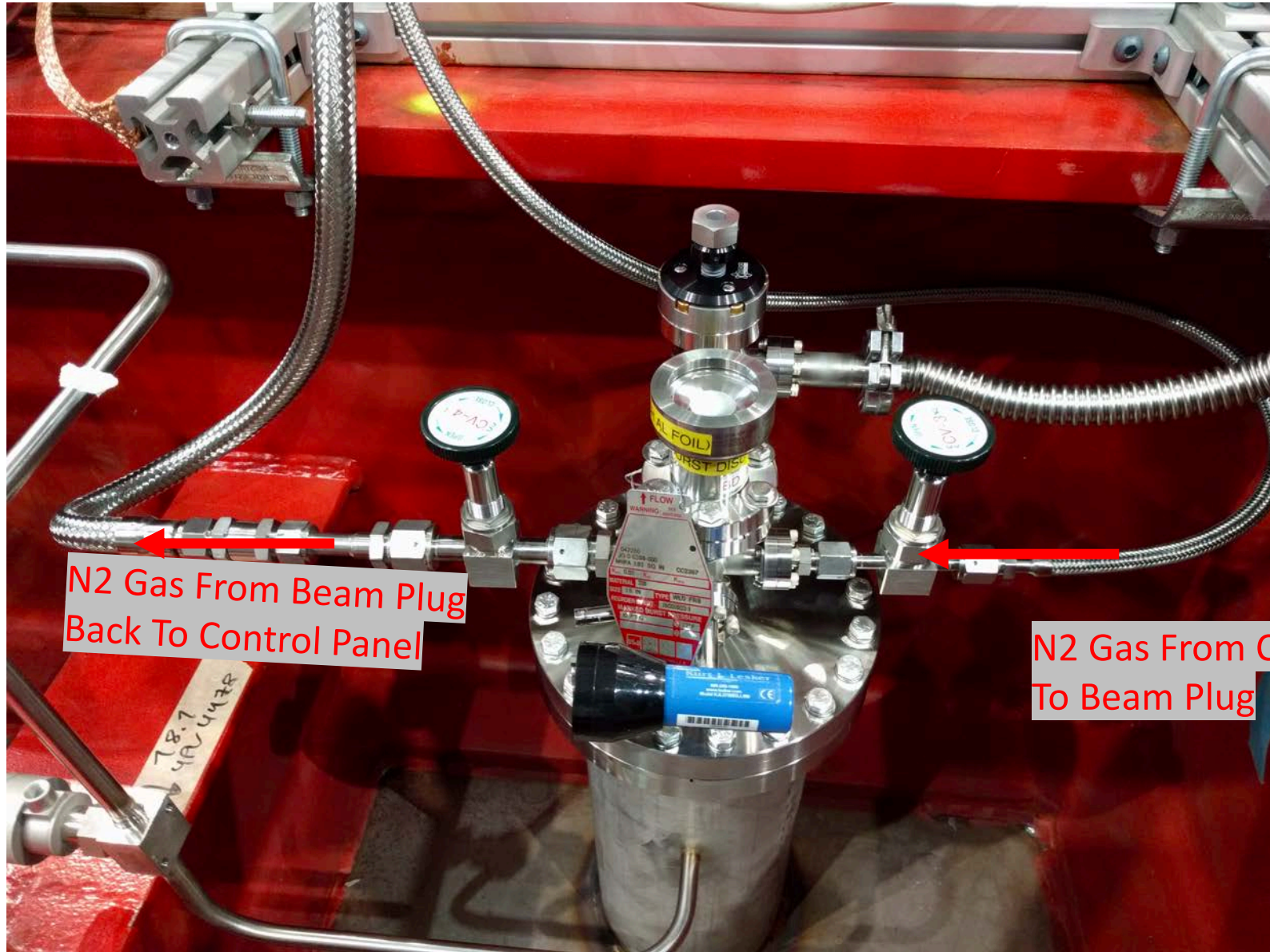
To feedthrough flange

Runway Beam

CPA Bridge Beam

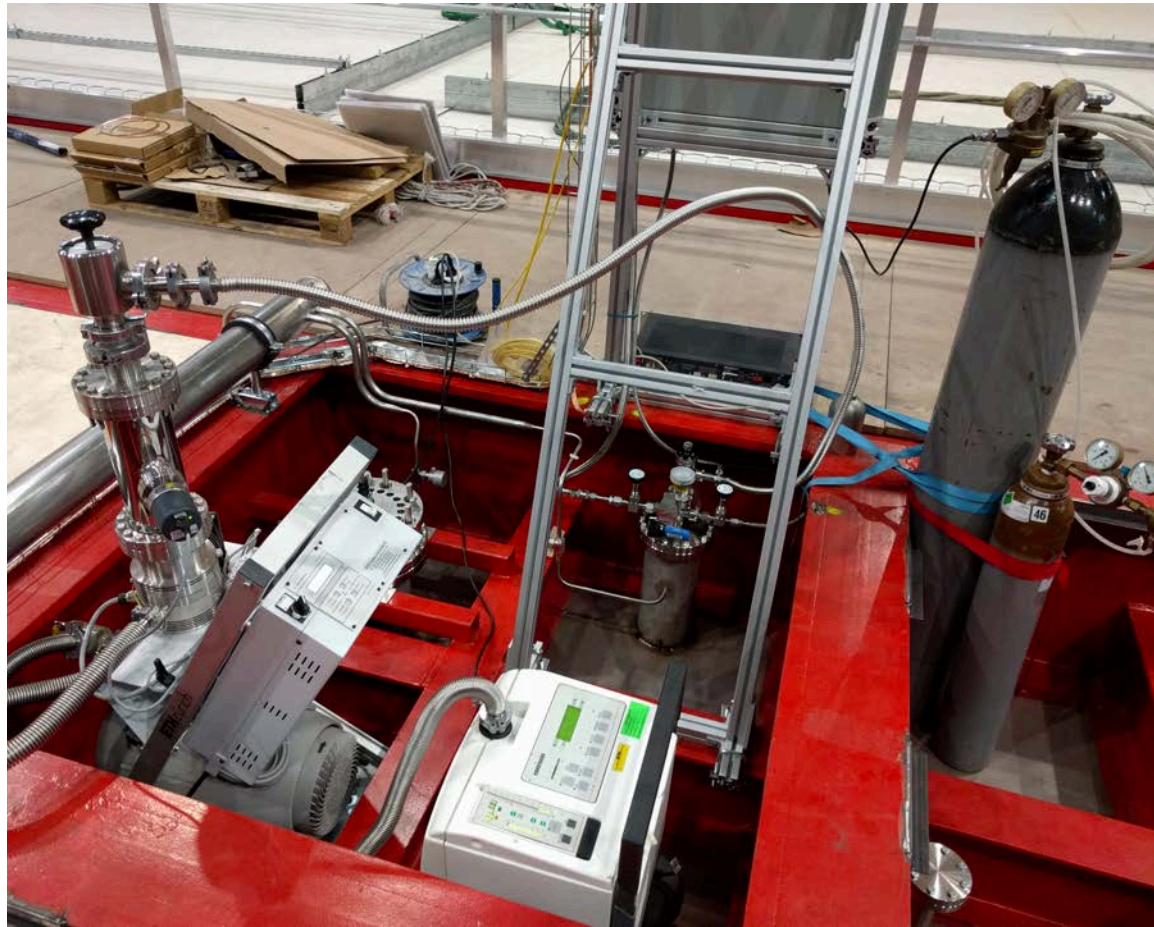


Hose connections between the flange and the gas control panel were made today



Beam plug gas system installation is completed !!!!

Leak Check



- Spayed He inside the cryostat along the beam plug and gas hose
- Sprayed He on top of the cryostat around the feedthrough flange and sensor
- Vacuum at turbo pump $\sim 5 \times 10^{-7}$ mbar
- Leak rate $< 8 \times 10^{-10}$ mbar L/s

Final Leak Check of the Beam Plug System Completed !!!

Electrical Connectivity Test

- Validated electrical connections using Keithley meter
- Profile # 1 to beam plug ground: $\sim 58\text{GOhm}$
- Profile #5 to beam plug ground : $\sim 55\text{GOhm}$
- SHV center conductor (beam plug current monitor) to ground: 0.998MOhm
- All consistent with expected values

Remaining Installation Task

- Integrating 5 beam plug sensors (two RTD, two pressure and one current monitoring) with DCS
- Likely to start cabling tomorrow

