ProtoDUNE-SP operation updates

Xe-injection in ProtoDUNE-SP

- Before covid-19 pandemic,
  - 1st (13-14 Feb) and 2nd (26Feb-3March) Xe injections: **3.3 ppm of Xe in total by mass**
  - Took data with standalone system and DAQ
- Since the cooling water was not guaranteed during the time of CERN entry restrictions, we had to turn off DAQ and TPC
- At the end of March, thanks to DAQ group, using couple of fans in the DAQ room, turned on minimal DAQ and TPC to monitor the stability of Xe injected into the system
  - APA3 and APA6 SSPs
  - CRT
  - Detector slow controls
  - Servers for the Run Control
- **3rd Xe injection from April 3rd to April 8th**
  - **5.3kg, 7.4 ppm additional Xe injected**
  - **Took lots of data with minimal DAQ and standalone system**
- **Now we have ~11ppm (by mass) of Xe inside the cryostat**
  - **Ultimate goal is to reach 20 ppm**
  - **Lots of good progress with the data analysis**

Turning on DAQ and TPC

- Cooling power for the DAQ room has been guaranteed since last Wednesday, April 22nd
- Then we turned on the full DAQ and TPC
- Biased the cathode with 180kV as well
- Took data with all detector components at 0V/cm and 500V/cm fields
- Everything seems to be active and working as expected
    - The only exception is SSP503. Bias voltage seems to be not working

- Access to CERN is still restricted!! Only allowed people can enter the site
- However, detector and DAQ is available now for remote operations
- We are planning to continue with Xe injection next week