

# Dual Phase Photon Detection System Consortium Meeting

Inés Gil-Botella

DPPD Consortium Meeting

26 November 2019



**Ciemat**  
Centro de Investigaciones  
Energéticas, Medioambientales  
y Tecnológicas



# Topics for today

- Latest news and LBNC meeting preparation
- Database survey (Burak)
- Photon analysis update (Ana)

# Management meetings

- Last Technical Board on November 15
  - Some general statements about TDR, interfaces, design reviews for protoDUNE-II...
- Preparation for LBNC (meeting Nov 25 with spokes, Eric and DP people)
  - Agenda on Thursday, Dec 5
    - ProtoDUNE installation, operation, (2 h)
      - One talk about Photon Detection System in ProtoDUNE-DP (15 + 5)
    - R&D plans, next steps, DP-TDR status
  - Agenda on Friday, Dec 6
    - Possible technical discussion...
  - No judgment about the TDR is expected from LBNC (but feedback would be useful); waiting for DP validation with ProtoDUNE-DP

# Tentative agenda

- LBNC charge: Understand the progress made with the DP technology
  - Installation and operations of ProtoDUNE-DP
  - Description of successes and difficulties (ion build-up, bubbling, purity)
  - R&D plans and schedule including 600 kV PS design
  - Path forward towards a DP detector → future verification program including a second phase of ProtoDUNE-DP operation and TDR at an appropriate time
- Thursday, Dec 5
  - 14:00-16:00 ProtoDUNE-DP detailed progress (several presentations)
  - 16:30-17:30 Dual Phase R&D Plans (including a TDR talk or discussion)
- Friday, Dec 6
  - Technical breakout session on ProtoDUNE-DP (to be confirmed)

# Outline of my talk (15')

- Description of the system (based on previous 3x1x1 experience): PMTs + calibration system
- System installation in ProtoDUNE-DP (PMT layout)
- Data taking conditions: random trigger, calibration trigger, PMT trigger, external trigger (from charge, from panels...)
- Summary of data collected
- Analyses on going:
  - PMT calibration
  - Background level (noise, SPEs, ...)
  - Purity determination
  - S1 signal (muon rate, amplitude, variation with fields, ...)
  - TPB/PEN WLS performance
  - S2 signal identification & characterization
  - ...
- Difficulties, improvements, plans
  - White Rabbit system allows to have the same timestamp and synchronized light & charge event by event
  - Need to take data in coincidence with charge

# Your help, please

- I'll ask you some information to complete the slides (by Monday Dec 2)
  - Clara, Ana, Jose: about the ProtoDUNE-DP data collected so far and status of analyses
  - Michel, Burak: a couple of slides with the status of the DPPD TDR chapter (including internal and LBNC reviews)

# Next meetings

- Dec 17, DPPD meeting at 16:00h
- Jan 21, DPPD meeting (in preparation for collaboration meeting)
- DUNE collaboration meeting at CERN (27-31 Jan, 2020)