

# FarDet Data Collection Session

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MINOS Meeting

Caltech

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# Agenda

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- Overview of plane check out plans (Nelson)
- Status and plans for the DAQ to accommodate PPP requirements (Belias)
- MUX box check out (Nelson for Rebel)
- Pedestals, Singles, & LI check out (Lee)
- Online monitoring update (Nelson for Petyt)
- Wrapping it up: PPP planning (Nelson/All)
- The future: Data Certification (Nelson/All)

# What's PPP?

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- Plane Procedure Posse...
  - > A lame name for an important group
  - > This group has been working since October to prepare standard procedures for commissioning new FD planes **using the DAQ**
  - > The group is made up of
    - Tass Belias, Roy Lee, David Petyt, Brian Rebel, Chris Smith, and Jeff Nelson (Dave Ayres and Geoff Pearce too)
- The results will be transfer of knowledge
  - > A set of tested and documented procedures
  - > Check sheets for future work to assure QA
  - > Feedback to the DAQ group on the functionality of the DAQ system

# Overall Checkout Plan

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- Configuration of DAQ/HV for data collection on new planes
- MUX/FEE installation and checkout
- Pedestal runs
- Charge injection run
- Dynode scan
- Singles runs
- Light injection runs
- Plane trigger data

# In finer detail (I)

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- Pedestal run - no HV
  - Produces pedestal table (mean)
  - Produces anode threshold table ( $\text{RMS} \times 3 + \text{ped}$ )
    - Would results improve with a simple truncation algorithm?
- Pedestal run - with HV
  - Compare with the previous pedestal tables
- Charge Injection
  - Electronics diagnostics
  - Flow chart for debugging/repairs
  - Pictures and details on FEE fixes
- Dynode threshold scan
  - Do we bother? Define a test program and execute it
  - If so, how many runs and what levels?
  - Automate threshold scans in the future?

# In Finer Detail (II)

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- Singles Run
  - Optical continuity though correlations
- LI (Unsparcified)
  - One low light level
  - One pmt at a time?
  - LI mapping correct?
  - Initial gain calculations
  - Rates are an issue until hardware trigger fully implemented
- LI (Sparcified)
  - Step through different light levels
  - 4 planes at a time
  - Optical transmission test
  - Initial non-linearity calibration
- Reconfigure for plane trigger run
  - Run diagnostics are a near future issue

# Completion of PPP work

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- What's missing?
  - > Completion of development
    - LI and Dynode scans still need work
  - > Integration of code between offline and online jobs - well underway
  - > Completion of documentation
  - > A full test of all steps
  - > Feedback and training
    - Develop a check list for the process
- Goal: finish this up by the end of the month
  - > Integrate this into the "unified" data meeting for future developments

# Certification of Collected Data

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- What should we be checking on a run by run (or shift by shift) basis?
  - Have the pedestals drifted?
  - Have the hot channels changed?
  - Have the dead channels changed?
  - LI OK?
  - Are the muon rates constant over the run?
  - Are the hardware triggers constant over the run?
  - Timing consistent with previous runs?
  - Look at some displayed events
  - Environmental data OK?
  - Data being logged to FNAL?
  - Upward muon filter (?) with an alarm?
- What's missing and what's not worth the effort to check routinely?



# CCD Work

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- Define histograms
  - > Are there quantities not appropriate for the online monitoring program?
  - > David pulls them together
- Handbook of what's good and what's bad
  - > Check list
- Training and iteration