

- ▶ Marko discussed iTOP calibration:
  - Assumed electronics calibration will occur in front-end
  - Channel-by-channel  $t_0$  will occur in laser run ( $\sim 1/\text{day}$ )
  - Common  $t_0$  via di-muon events
  
- ▶ And alignment:
  - Once per experiment, use well-known tracks (di-muons)
  - First pass at log likelihood code available at end of 2014
  
- ▶ Comment was made that iTOP alignment will be dependent on alignment of other detectors (which update more frequently)
  - If they calibrate correctly, shouldn't be an issue
  - iTOP should also “move less” than inner detectors?

- ▶ Effort underway to generate common set of analysis modules
  - Perform general tasks that are similar in most analyses (and reduce errors)
  - Particle selection and cuts, vertex fitters, MC truth matching, classifiers...
  
- ▶ Various discussions about upgrading software
  - Python 3, ROOT 6, Geant 4.10, etc.
  
- ▶ Next year's Computing Workshop will be in Hawaii!

- ▶ 32 bytes considered much too large by Marko!

- ▶ Already problems with redundant header data in COPPER

B. Kirby

## Feature Extraction Plans

- iTOP feature extraction development in progress
  - Basic implementation ready ~July 15
- Front-end electronics will produce a reduced-size data packet for each MCP-PMT pulse
- Data included in reduced size data packet
  - Channel identifiers
  - MCP-PMT pulse time, height
  - Pulse width
  - Quality flags
  - Trigger information
- Assume 32 bytes required per feature extracted pulse
- ~16 bytes required for simulated hits

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TOP raw data and background

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- ▶ Basically, iTOP raw data format is still “in development” (which we knew!)

## ▶ Need to define multiple raw data formats:

### ■ Production

- [Header] [Channel] [Time] [Height] [Width] [Quality?]

### ■ Debug

- [Header] [Channel] [Time] [Height] [Width] [Quality?] [Trigger info] [...?]

### ■ Waveform

- [Header] [Channel] [Time] [Height] [Width] [Quality?] [Trigger info] [...?]  
[waveform...]

## ▶ Should also pack/unpack data in FPGA (where it comes for free)

- Can work with bytes/words on the ARM side