Status Report

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20 Mar. 2020
mPMT-Japan meeting

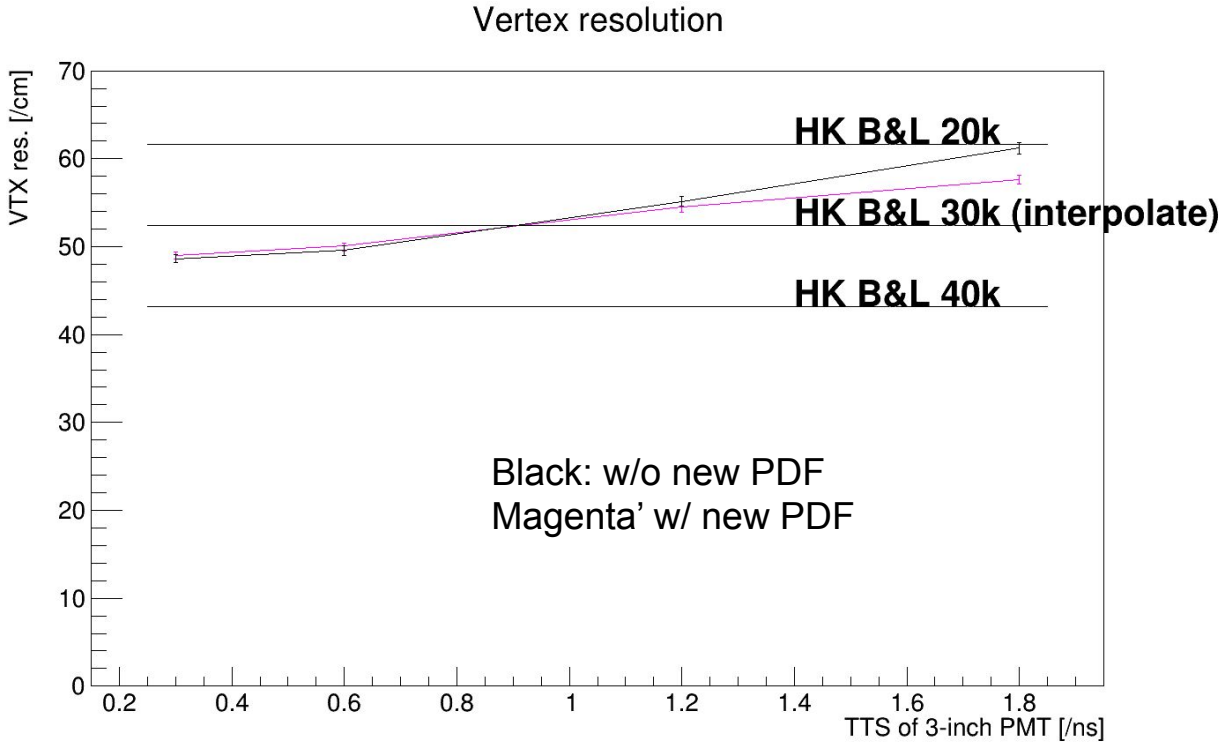
Update

- Impact of TTS on LEAF
  - I checked vertex resolution with various TTS of 3-inch PMT
  - Made new timing PDF and calculated with them
- MENPHYNO
  - Monitoring the DAQ
  - Not started the analysis

Impacts of TTS

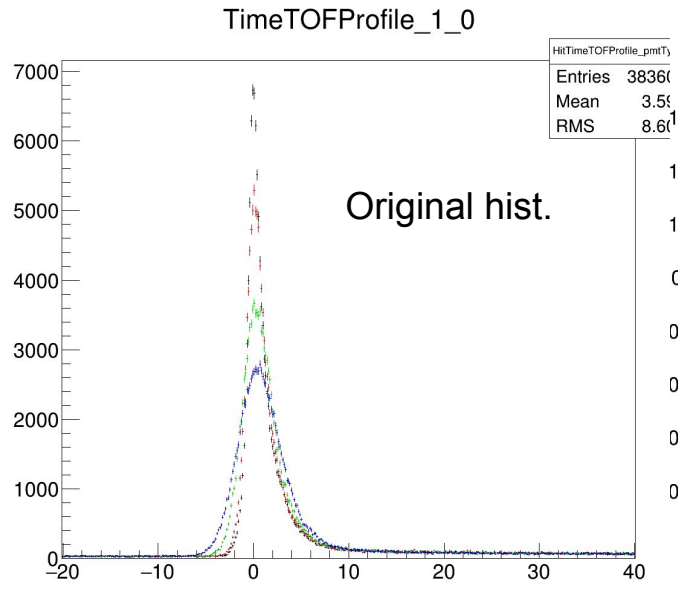
- At HK-PCM of Feb., we got the comment why mPMT has better performance than 20-inch B&L.
- MC: HK mPMT hybrid (B&L 20k, mPMT 10k)
  - 3-inch PMT: dark rate = 100 Hz, TTS = {0.3, 0.6, 1.2, 1.8} ns
  - 20-inch B&L PMT: dark rate = 4.2 kHz, TTS = ? ← depend on Q
  - 10,000 electrons, uniform in tank, isotropy

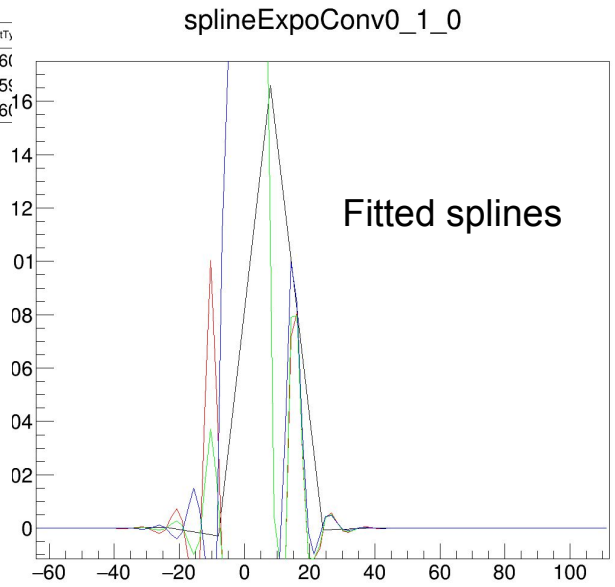
I tuned the LEAF with various timing PDF and confirmed some improvements in higher TTS region. But I am not confident that the timing PDF were generated correctly (see next page).

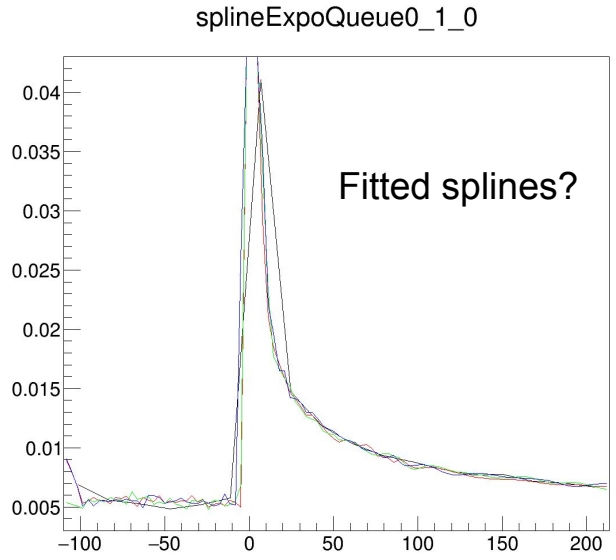


Timing PDF in LEAF

- Low energy fitter (LEAF) is likelihood fitter using timing PDF of hit time-TOF.
- Made the timing PDFs of TTS (at 1 sigma) = 0.3, 0.6, 1.2, 1.8 ns (black, red , green, blue)
- The original timing profiles looks good, but the generated ones look strange where they have fluctuation and wrong width (what did I miss-take?)

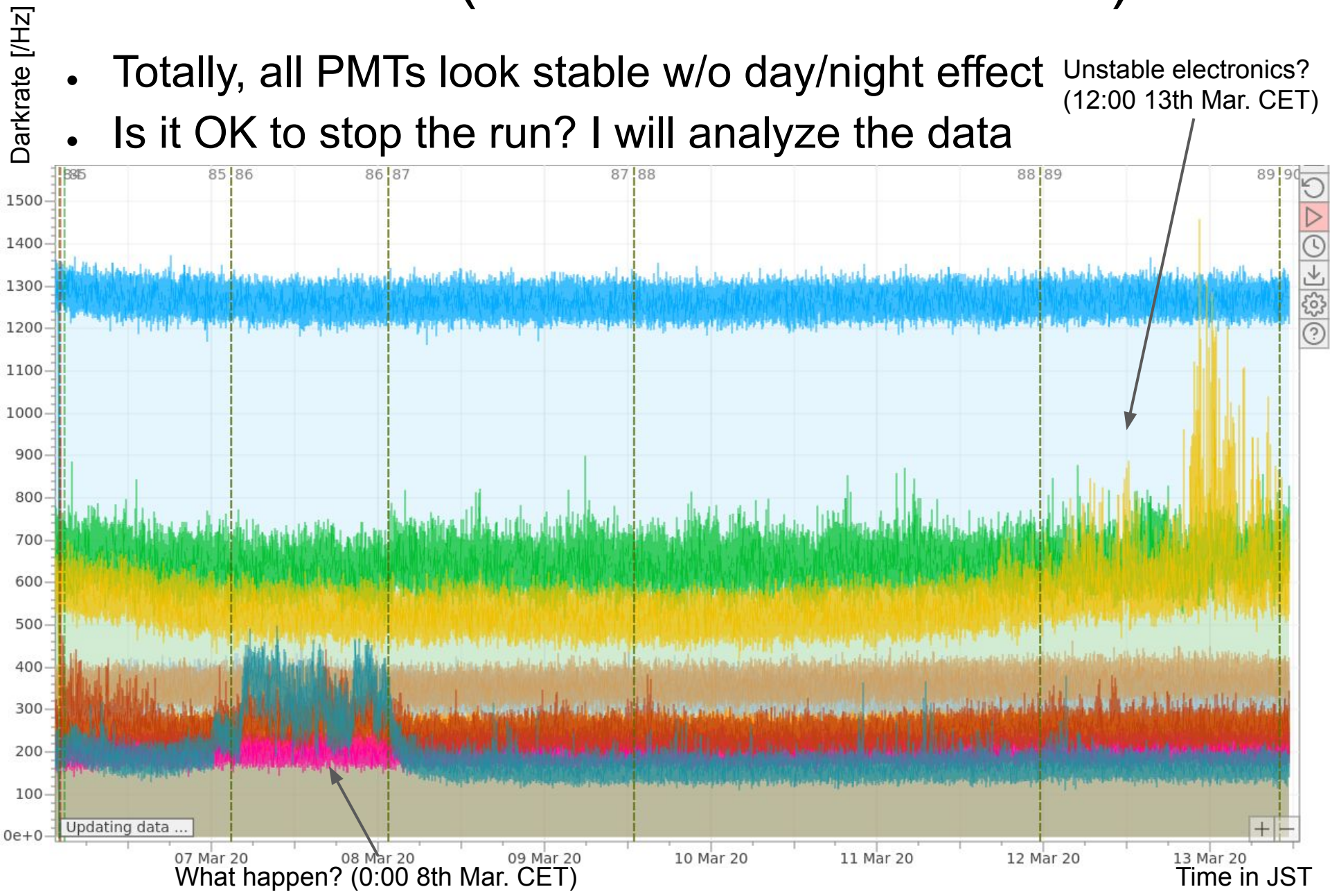






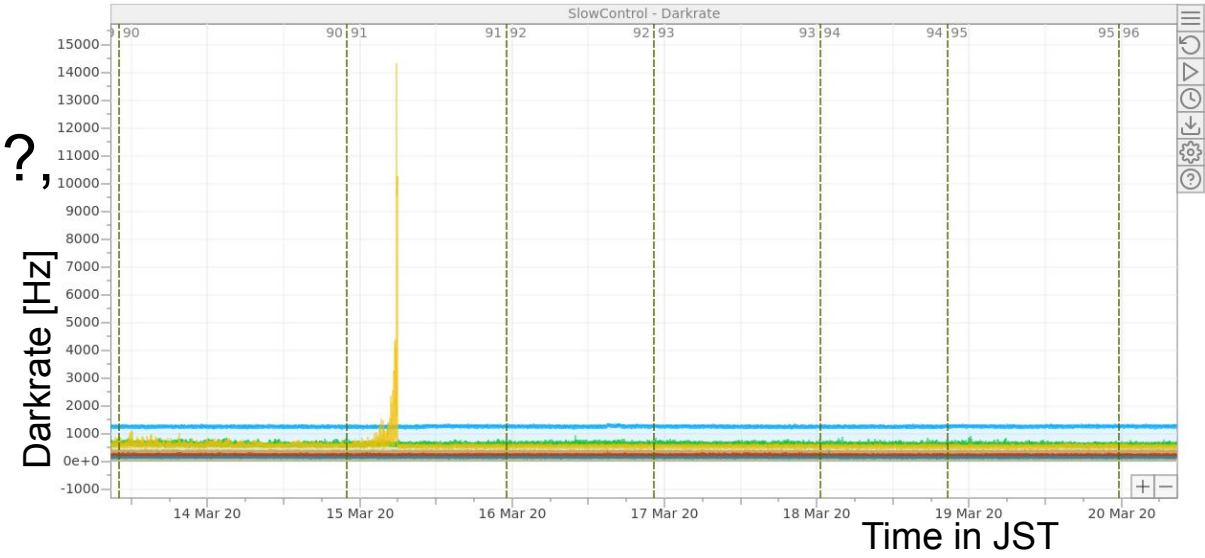
MEMPHYNO (reminder of last week)

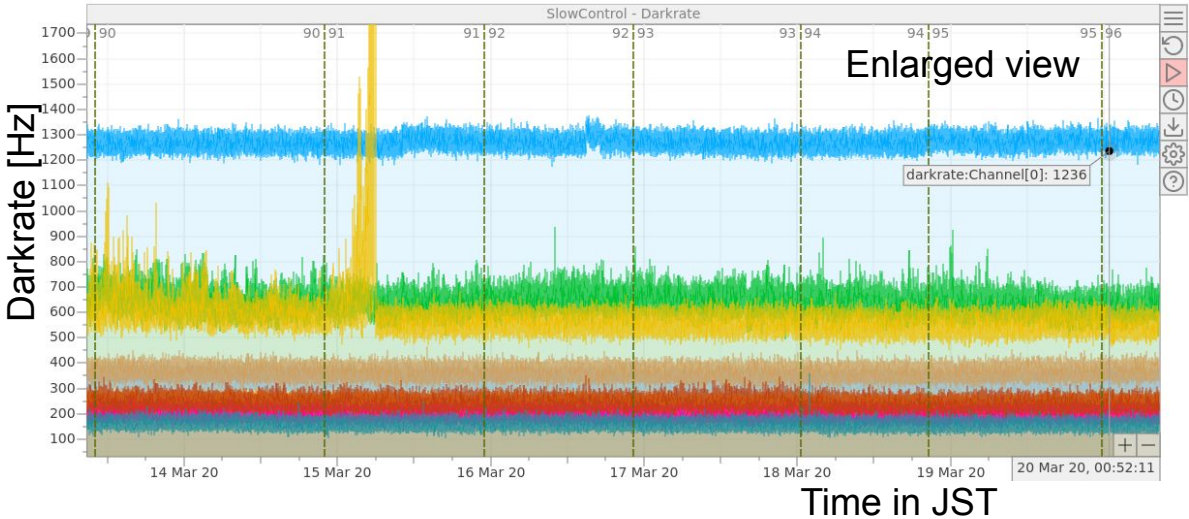
- Totally, all PMTs look stable w/o day/night effect
- Is it OK to stop the run? I will analyze the data



MENPHYNO monitoring

- Monitoring daily
- Yellow ch. has big spike (what happen?, instability of elec.?)





Plan

- Take holiday (23-25 Mar.)
- Analyze MEMPHYNO data