# BKLM Scintillator Readout Status

2018-02-26, Belle II, B.Kirby and I. Mostafanezhad

# Scintillator Readout Recent Activity

- Firmware update from Brandon seems to have largely removed data corruption issues from SCROD readout
  - Test by Yinghui et al documented in AGIRA [BIIKLM-10](#)
- During test dummy firmware didn't initialize COPPER link cpr7001 d correctly
  - New AGIRA issue [BIIKLM-15](#)
- Both default and dummy SCROD firmware has encountered problems during high-rate global DAQ tests
  - Likely due to dummy firmware readout effectively operating at ~10% channel occupancy while simulating a realistic (~8 us) ASIC readout time
  - Do we need a new dummy firmware for GCR running?

# Plan - Debugging Scintillator Readout for GCR

- Debug SCROD-DataCon DAQ data stream - **Done!**
- Debug SCROD-DataCon Trigger data stream - **Start!**
  - Dummy SCROD firmware can output known trigger pattern, **posted on ttd11**
    - Two versions: #1 produces known trigger pattern and #2 sends one fake TARGET trigger primitive per readout request
  - Need a trigger expert (Dmitri) to record trigger stream for offline analysis
    - Can additional group member also get permission to do this?
- Check MPPC HV + threshold calibration - **do in parallel**
  - First pass: configure MPPCs using default scintillator firmware
  - Check that dark noise counts are ~50kHz at low trigger threshold, suppressed at reasonable operating threshold
- Check latest version of high-rate scintillator readout - **in progress**
- Take UT3-triggered cosmic data in local mode - **do after trigger stream test**
  - Use dummy SCROD firmware first, then default scintillator firmware
  - Look for time correlation between scintillator trigger and real RPC triggers