INTT Weekly Meeting

Joseph Bertaux

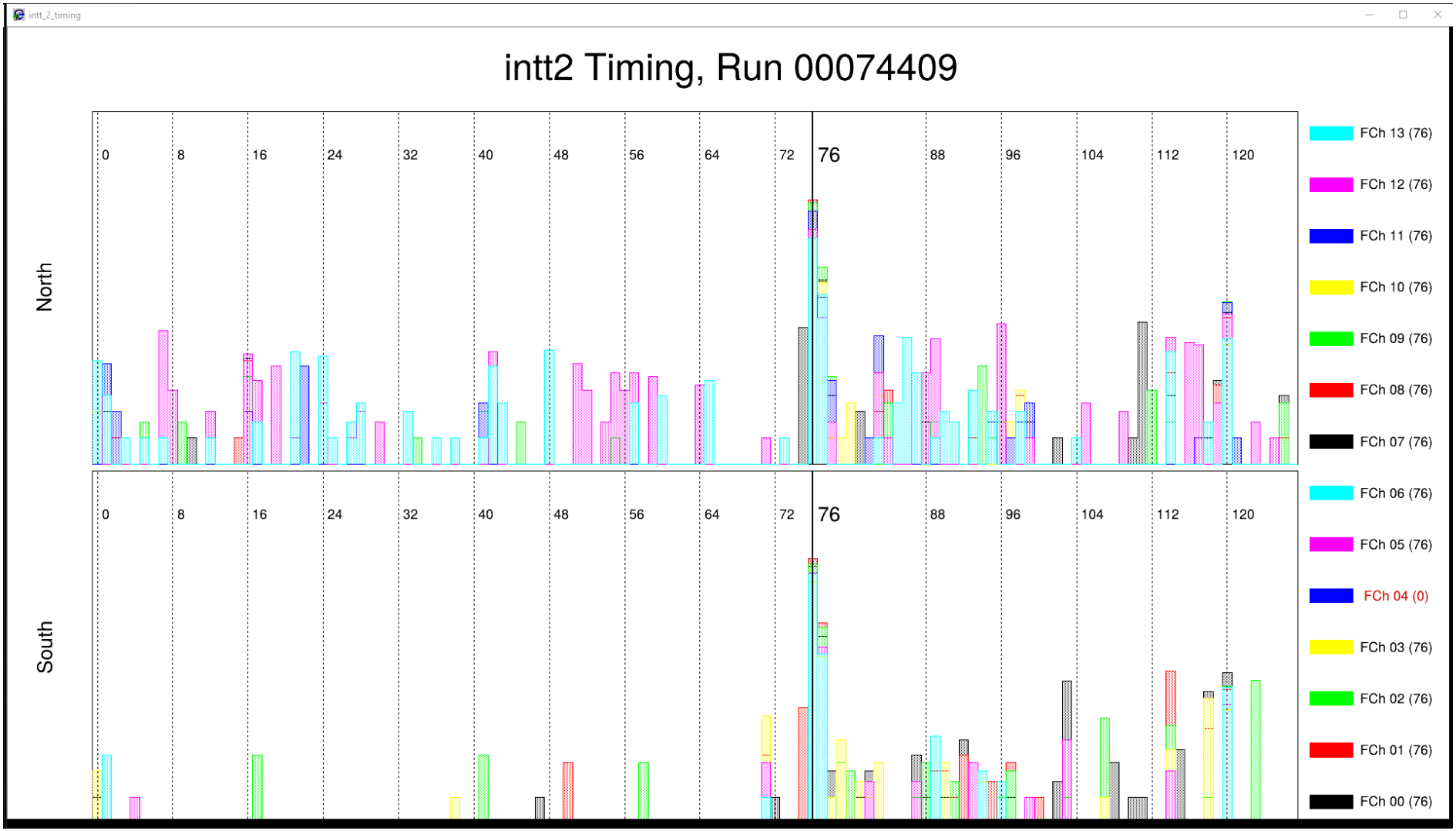
Purdue University

October 2, 2025

Offline QA plots

- Finally ported the programs I wrote for quick analysis to the main Offline QA workflow
- Changes have been merged after Yuko's changes
  - The histogram's Yuko's code expects are produced by the calibration module, not the QA module
  - Hopefully it is okay
- Includes very detailed plots and an overview plot
- Examples on next slide

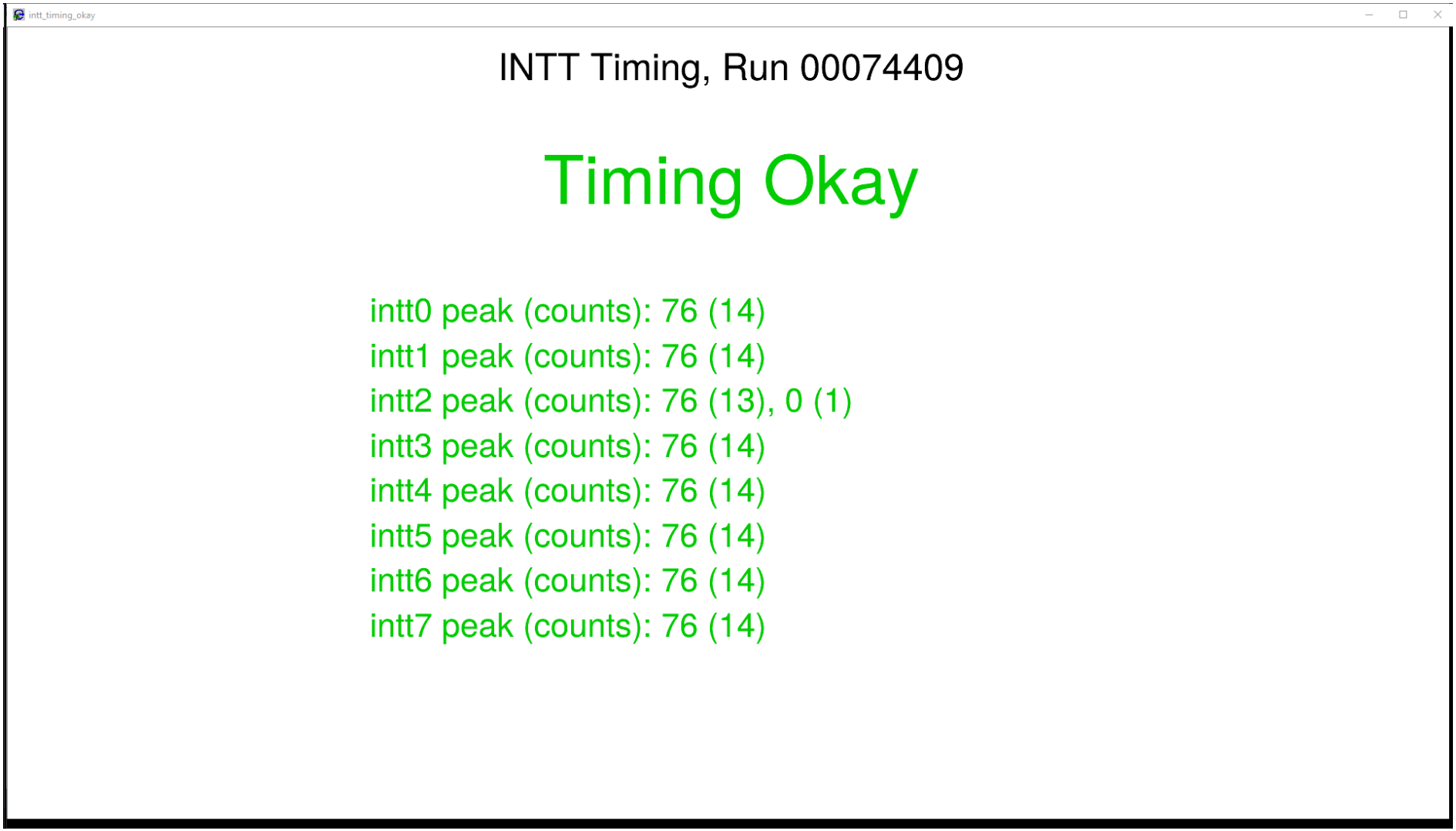
Detailed plot



Detailed plot (cont'd)

- Shows timing distribution of each felix channel (one plot per server, here intt2's is shown)
- Broken up by North/South side for readability
- The peak of each channel is printed in the key
- You may recognize it from the `eventjb` library I made for the commissioning, though it has an improved legend:
  - Each felix channel has its peak position printed next to its key in the legend
  - If the peak position is different from the most often occurring one, the label text appears in red
- (There was nothing wrong with this run–I only ran 20 events, which was so few we didn't get to unpack any hits from intt2 felix channel 4)

Overview plot



Overview plot (cont'd)

- Each server has a list of peaks
- I can go through this list and, for each *unique* peak:
  - Compute how many times it occurs
  - Re-sort the list in order of most occurrences
- These are the lists `76 (14)`
  - `76` is the peak position
  - `(14)` is the number of felix channels which have 76 as the peak position
- Or, in the case of `intt2`
  - `76 (13)` because 13 felix channels have a BCO difference peak at 76
  - `0 (1)` because 1 felix channel has a BCO difference peak at 0
  - (We can check the detailed plot to see which channel–it is channel 4, note the text is red)
  - (There was nothing wrong with this run–I only ran 20 events, which was so few we didn't get to unpack any hits from intt2 felix channel 4)

"Timing Okay" criteria

- For each server, I can say its peak is the most occurring peak position among its 14 felix channels
  - The timing is "okay" if all servers have the same most occurring peak position
  - Each server has a minimum number of felix channels (e.g., 12) that share the most occurring peak position
- I wanted to solicit feedback on what this minimum number of felix channels should be
  - It is extremely rare for there to be variation in the peak position, among felix channels, for a given server
  - However, perhaps it is possible in low-luminosity situations due to extremely noisy channels
  - I think the most "extremely noisy channels" any server seems to have is 2
  - I propose this minimum to be "12" (=14-2) but am open to suggestions