

Flash Report

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- Analyze Λ_c production in Monte-Carlo and prepare for pp data
 - Not started yet
- Hot/Dead channel analysis:
 - Currently have a classification algorithm
 - It works and uses several nice tricks
 - Not sure how well it will do in general
- Help and contribute to other INTT software as needed
 - Made a template SubsysReco directory
 - It has an example module for Fun4All analysis
 - Complete with Makefile.am and other sPHENIX tools
 - Contains instructions with how to edit it

For a run:

Prerequisite step: Make a TTree (one entry per channel) with

- hits per event
- channel (0-127)
- felix server (0-7)
- adc (0-7)
- felix channel (0-13)
- felix/fphx bco
- chip (0-25)
- (part of the) full bco

To-do:

- Need to use (felix server, felix channel) instead of (layer, ladder, arm)
 - Better b/c stored in raw data and do not rely on felix mapping
- Need to normalize hits by events
- Timing information is good to have as shown by Jaein
- **Automate this step**

For a run:

Classification

- Make a histogram of “adjusted” hitrates
 - Normalized by chip length
 - Potentially other normalizations
- Fit the histogram as sum of Gaussians
- Identify the Gaussians with smallest coefficients
 - These are “unlikely” channels
- If a channel is “unlikely” classify as bad
 - Not necessarily a good model
 - Narrow Gaussians can cut out good channels

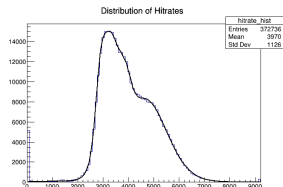


Figure: Sum-Gauss fit of channel hitrates. I catch extreme hitrates so they go into the bins of the histogram, not the underflow/overflow bins, and are included in the fit.

- Coded many useful tools and helper methods
- Need to change the implementation of classification method
 - Prior knowledge of what each term represents
 - More constraints on terms using prior knowledge
 - Can use same Bayesian logic as before
- Need to automate the prerequisite step to better obtain prior knowledge

https://github.com/josephbertaux/INTT/tree/main/general_codes/josephb/InttExampleAna

- Needed to create better tools to automate analysis
- Want to move toward Fun4All framework