

u-Channel: Corrections & LTSEP

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LTSEP SETUP

- Setting up iterations framework
- Based on Nacer's code, modified for the u -channel
- Take background-subtracted data as input
- Re-run shape study every few iterations

Complete, code will run

Verifying Corrections

- **All contributions to effective charge**
- HeeP Coin study of proton PID efficiency
- Verify m_X offset
- Apply u -shift

Now focusing on this

Goal: preliminary results for Hall A/C Collaboration Meeting June 17-18
($Q^2=3$, $W=3.14$)

Verifying Corrections



Correction	Source	Per	Status
Tracking Efficiency	Report Files	Run	Complete
Hodoscope Efficiency	Report Files	Run	Complete
Coincidence Blocking	Report Files	Run	Complete
Target Boiling	Report Files	Run	Verify?
EDTM	Report Files	Run	Complete
Proton Absorption	Geant4 sim	Setting	Complete
HMS Cal Efficiency	HeeP, Ali's Thesis	All	Complete
HMS Cer Efficiency	HeeP, Ali's Thesis	All	Complete
SHMS RF Efficiency	HeeP Coin data	Run?	TODO
SHMS Aero Efficiency	HeeP Coin data	Run?	TODO
SHMS HGC Efficiency	HeeP Coin data	Run?	TODO

Expert opinion wanted: am I missing anything?

"Efficiency" of less than cuts for proton PID likely rate-dependent.

Calculate run-by-run as a function of rate?



- Replay script calls:

```
TEMPLATES/COIN/PRODUCTION/KaonLT_TEMP/  
KaonLT_Offline_Physics_Coin.template  
DEF-files/PRODUCTION/KaonLT_DEF/  
Offline_Physics_CoinBlock_correction.def
```

- Efficiency CSV is created by:

```
UTIL_KAONLT/scripts/efficiency/add_eff_table.sh <runlist>  
Which calls: UTIL_KAONLT/scripts/efficiency/src/efficiency_main.py  
UTIL_KAONLT/scripts/efficiency/src/efficiency_report.py
```

- Output parsed by:

```
UTIL_KAONLT/scripts/uchan/calc_eff_charge.py <runlist>
```

Calculate effective charge per setting and save to CSV for use in analysis.



1. HeeP Coin study of proton PID efficiency (ref. Bill's thesis sec 5.3.8)
2. Binned kinematics as input to LTsep framework
3. Verify target boiling?
4. m_χ offset & u -shift – will change if Kin adjusts offsets for this data set
Q: is u -shift calculated per SHMS angle or using weighted average kinematics?