

# Stability and accounting systematics

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# Operational Review

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- ◎ Luminosity is computed online in b0clc01 crate
  - Not split in runsections (RS)
- ◎ From there it follows two paths
  - It is stored directly in the ACNET system
  - It is written in the CLLD bank of each event.
- ◎ Online DFC
  - LumMon receives events via CSL and computes the RS lumi by
$$L_{RS} = L_{IntegLive}^{LastEvt} - L_{IntegLive}^{FirstEvt}$$
  - LumMon never receives the real first and last event
  - The number is written in the online DFC

# Accounting Systematic

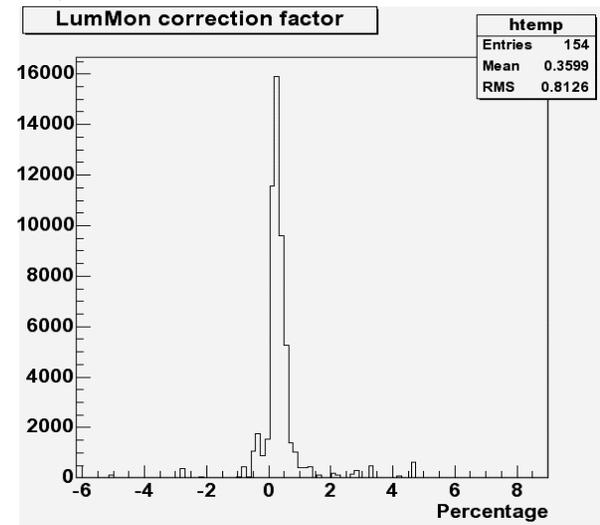
## ◎ Sources

- By virtue of not receiving all events LumMon slightly underestimates the RS value
- LumMon crashes, DB problems or other failures in filling the online DFC
  - Empty RS are filled either by interpolation or with a flat value when many missing
  - Not perfect -> new systematic

## ◎ Correction procedure

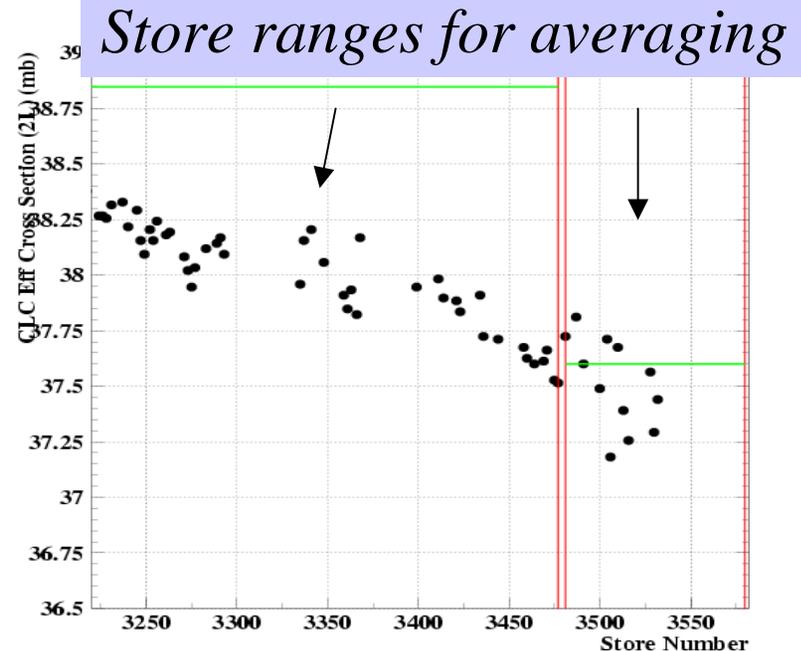
- True Lumi per Run known from ACNET, allows for calculation of a correction factor (per set of runs)

## ◎ Systematic : negligible ( $\sim 0.1\%$ )



# Stability Systematic

- ◎ Source : acceptance varies with time, online code uses same effective x-sec over some period -> inexact values
- ◎ Correction algo
  - o Compute the effective x-sec by store
  - o Get AVERAGE effective x-sec per store range
  - o Correct the online numbers accordingly
- ◎ Systematic comes from the averaging process
  - o Ranges chosen such that syst. < 1%



# Conclusion

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- ⊙ Algorithms for stability and accounting correction have not been changed
- ⊙ Independent of the instantaneous luminosity
- ⊙ We think the cited systematic errors are OK.