TPOL Offline fitting update

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Outline

- Bug report
- η range dependence
- Check histogram/pull
- Check polarization LEFT/RIGHT
- Summary & future

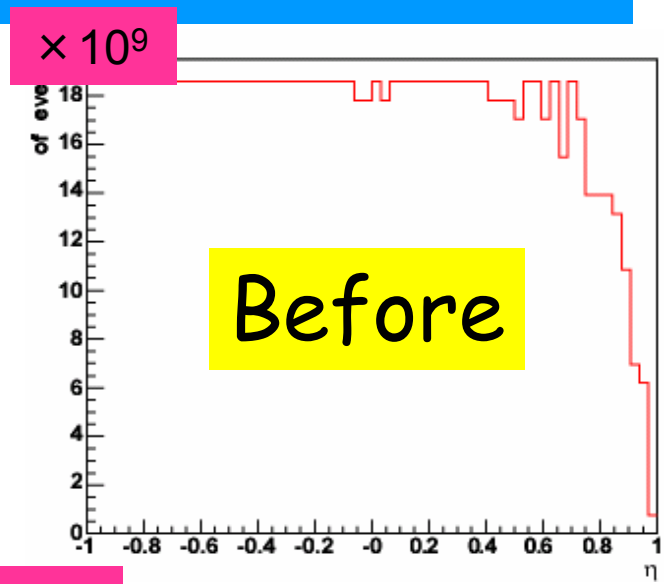
Bug report

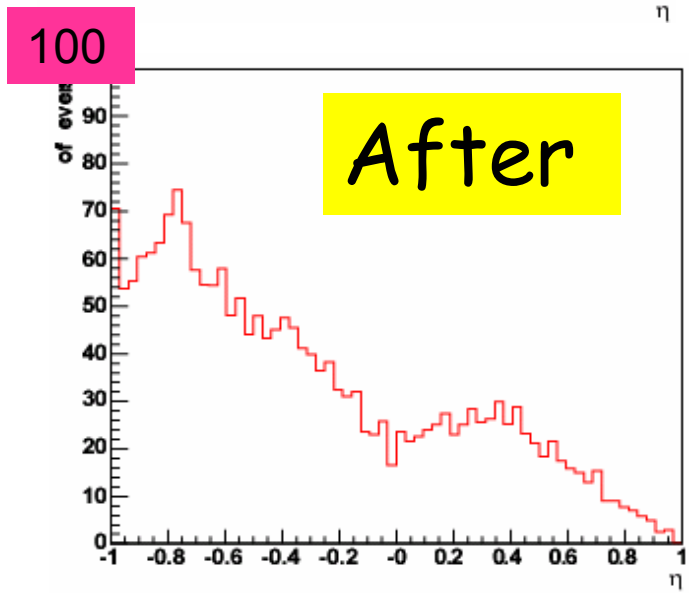
[Default] offdata=-z_off*f_off;

Unsigned int

Float

offdata=-(z_off*f_off);

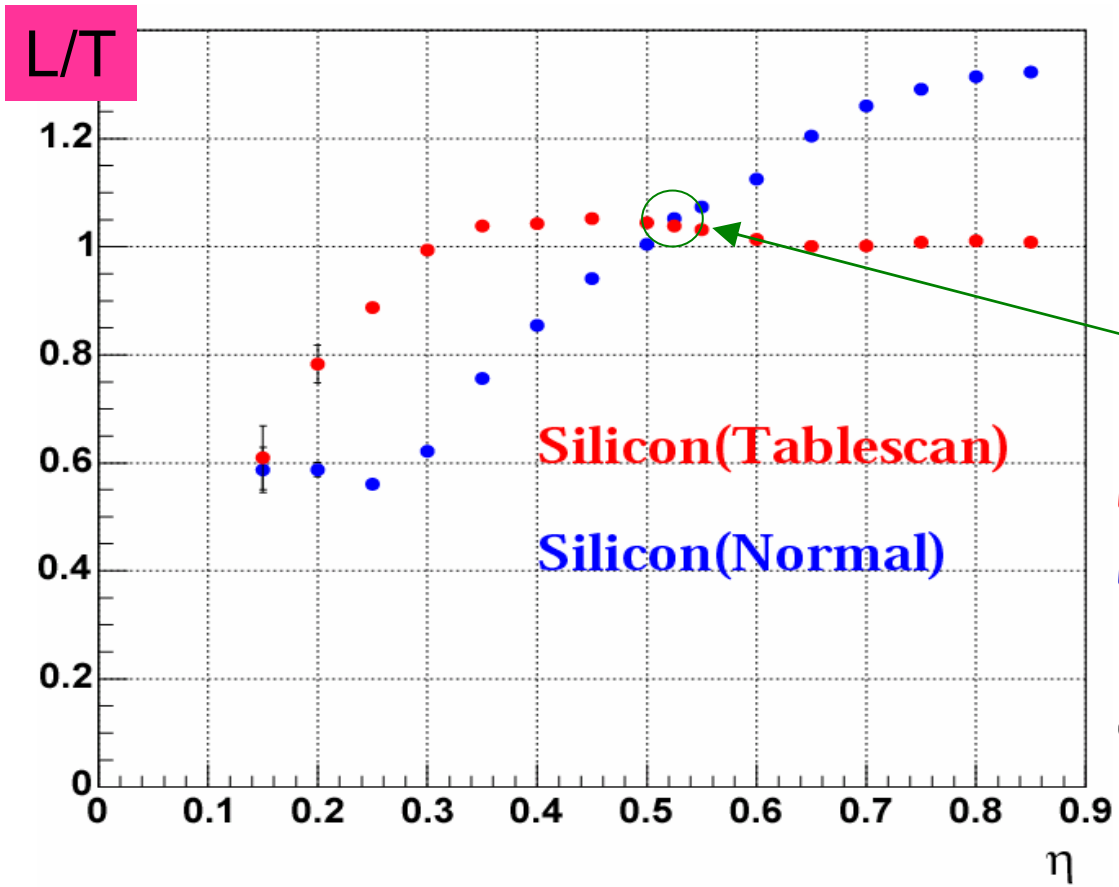




Back ground subtraction did not work due to this.

After the bug was fixed, checked η dependence again.

η range dependence



-0.525< η <0.525

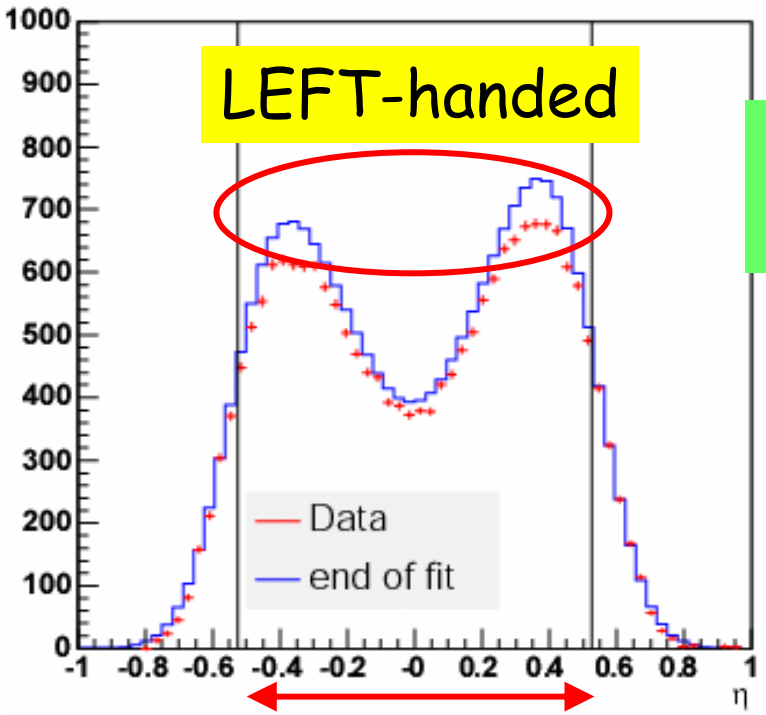
L/T~1.03 Table scan

L/T~1.05 Normal

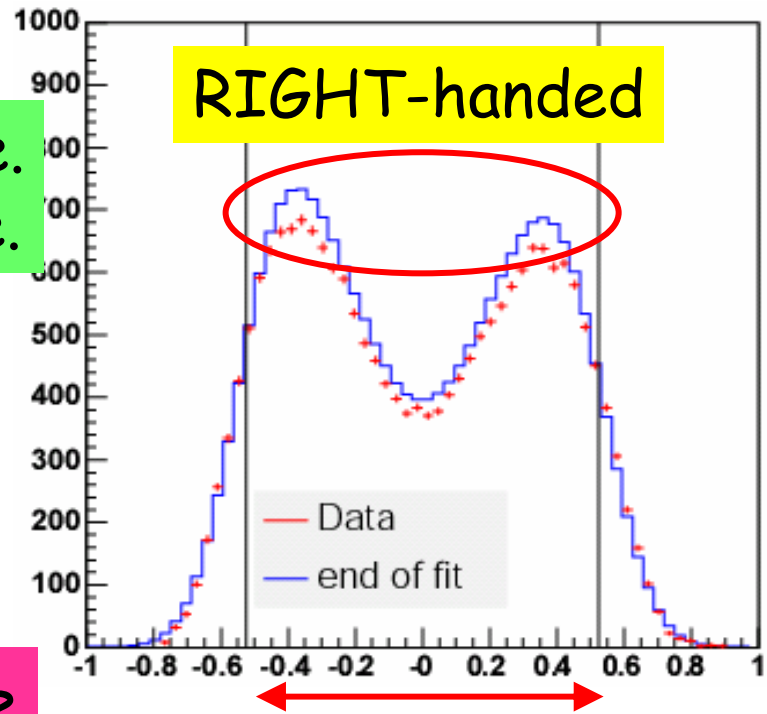
Check histogram/pull

Though L/T with Normal is unstable against η range, with Table scan is somehow stable.

Histograms 1



σE Free.
Skew Free.

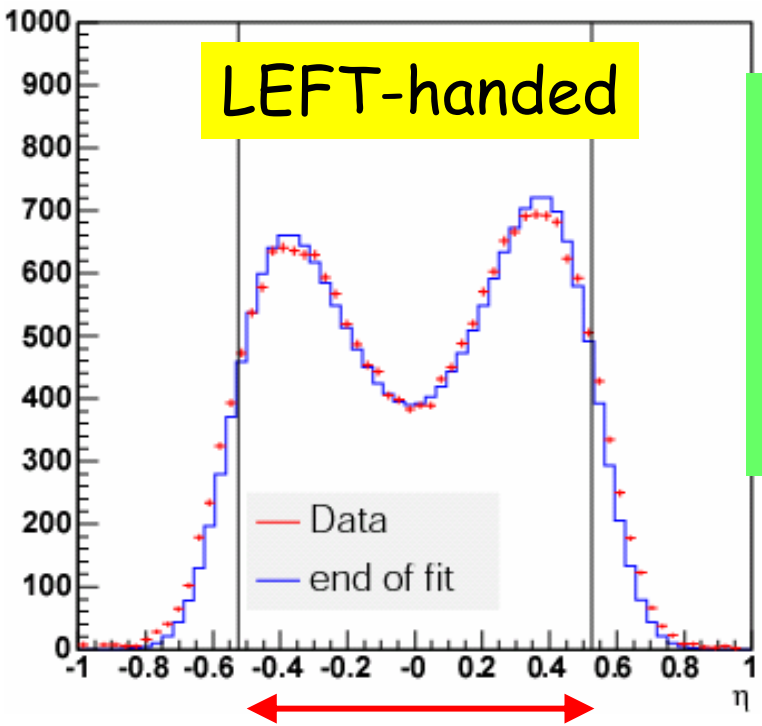


Fit range

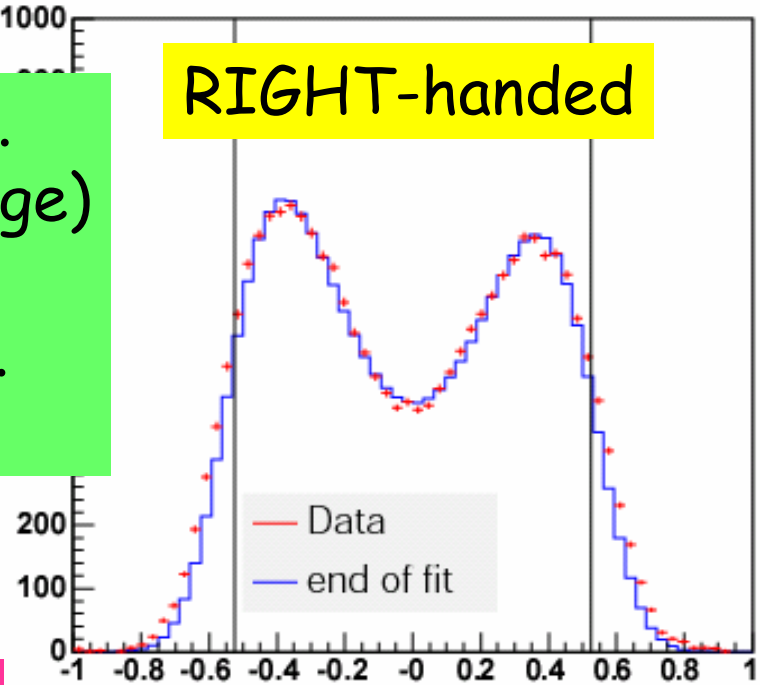
Some bugs (error estimation, etc) were fixed.

→histograms (data, end of fit) have an asymmetry against η.

Histograms 2



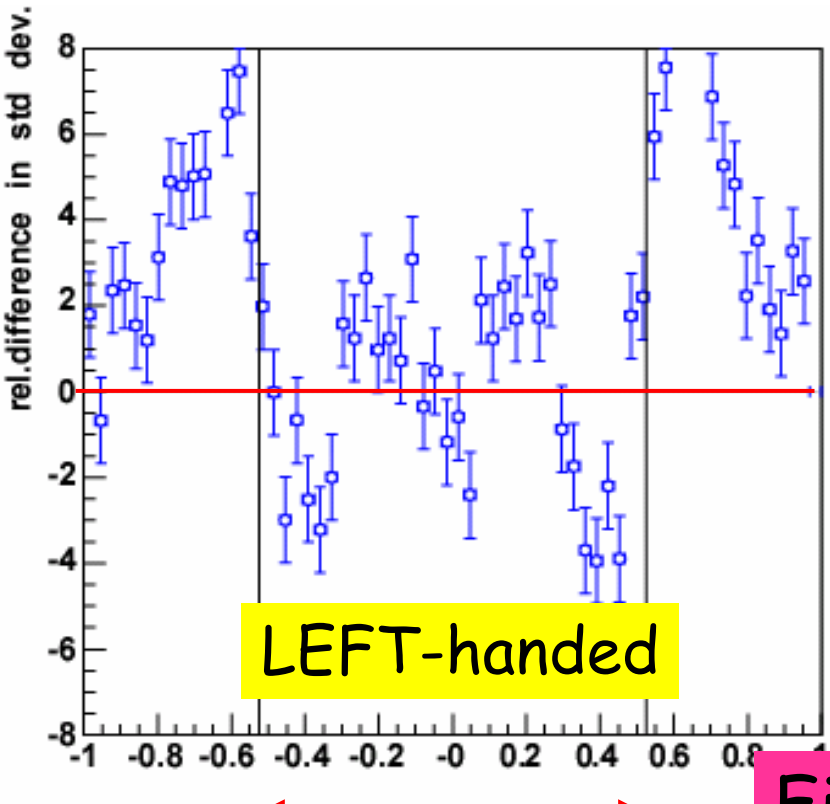
σE Fixed.
(Compton edge)
→20.3%
Skew Fixed.
→0.0.

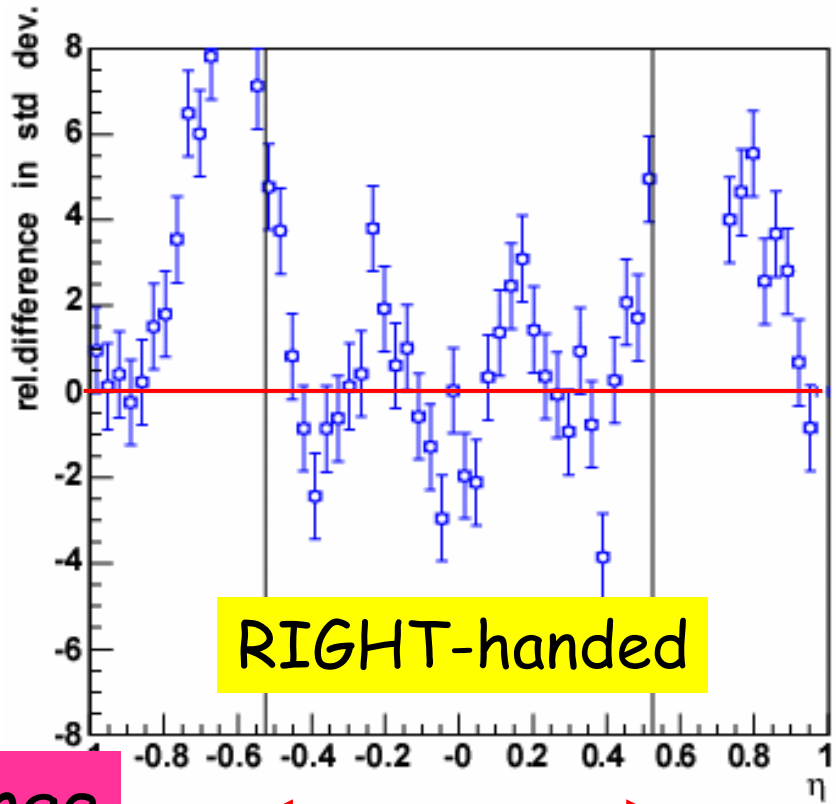


Fit range

Energy resolution is directly fitted at the Compton edge, then fixed to the value. Also, Skew (η resolution) is fixed to zero.→ the fitting seems to improve.

Pull

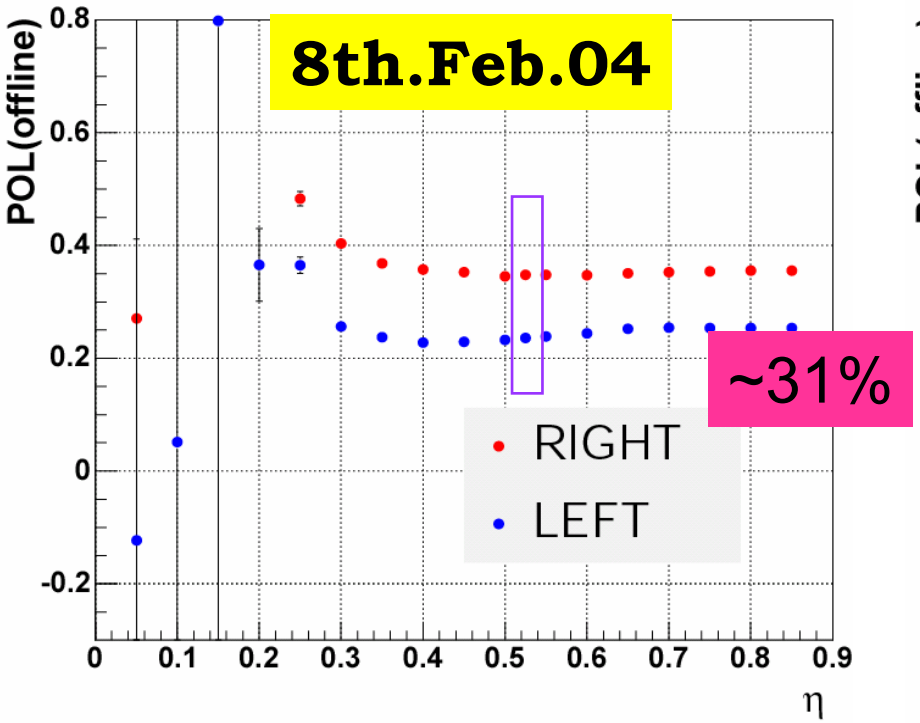


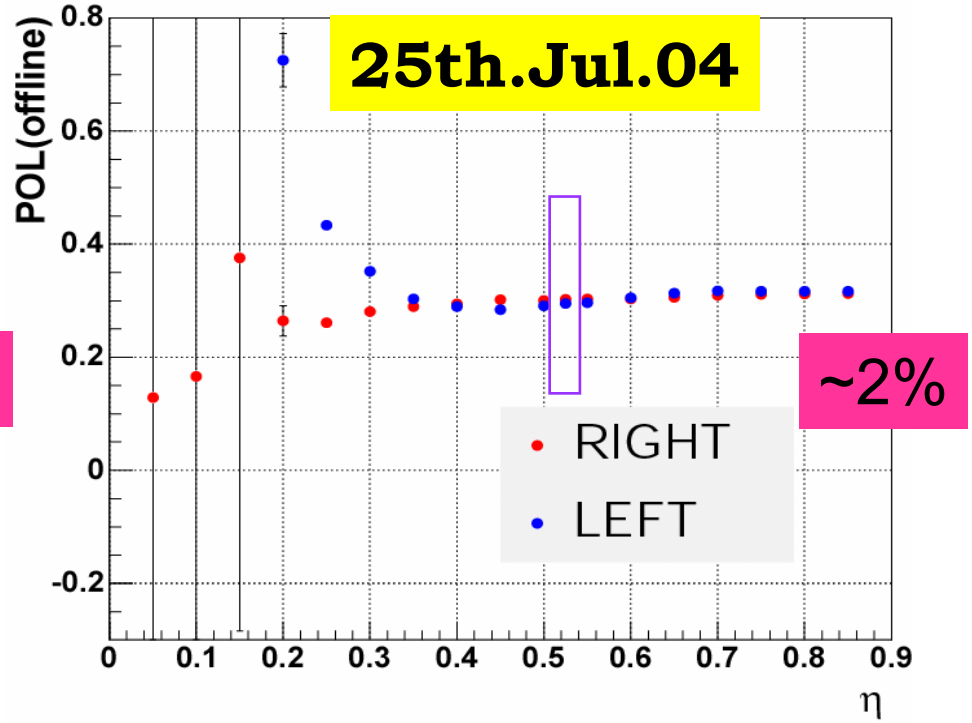


Fit range

The PULLs indicate the fitting does not seem to be good yet.

Polarization LEFT/RIGHT

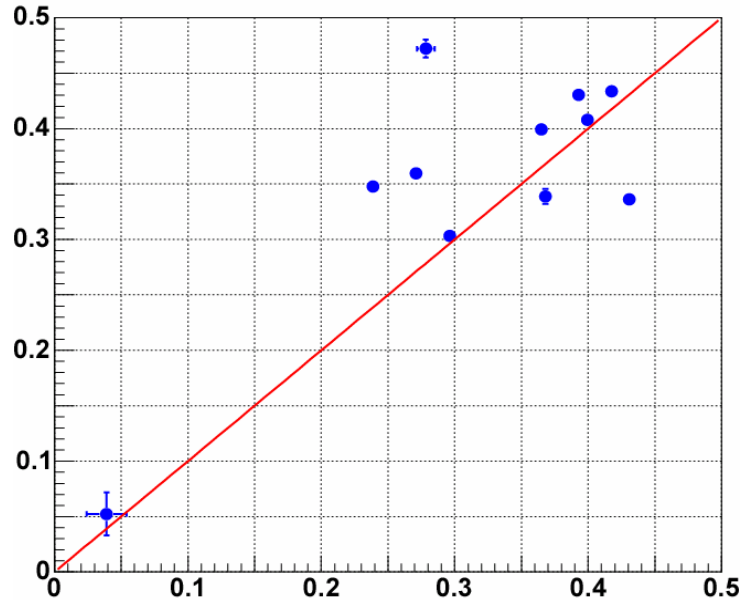


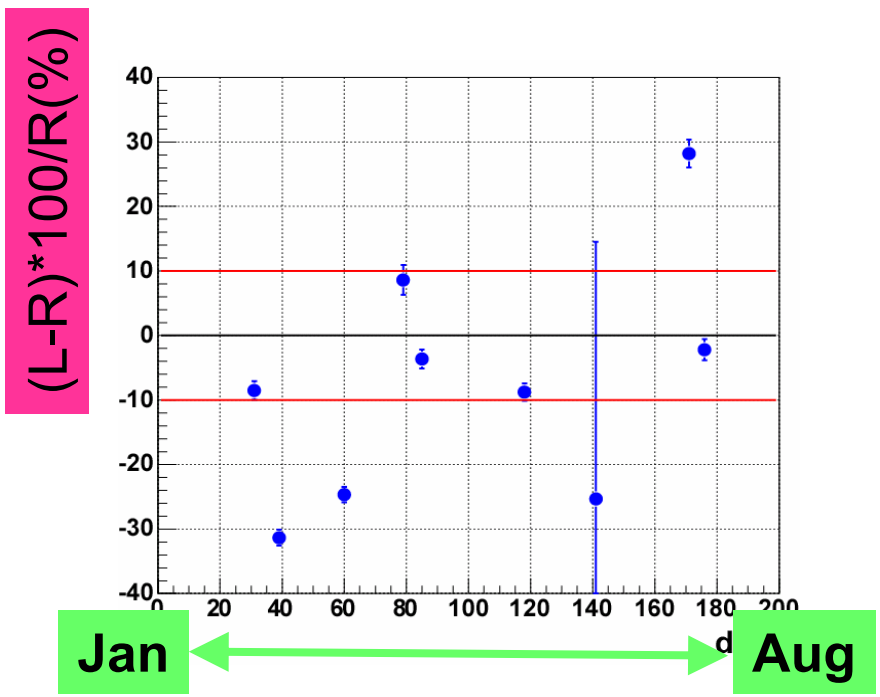


Polarization from LEFT and RIGHT are almost stable against η range. But, the difference between them seems to have time dependence → check it next.

cont'd…

Data 31st.Jan, 8th.Feb, 25th.Feb
1st.Mar, 20th.Mar, 26th.Apr
28th.May,20th.Jun,20th.Jul
11th.Aug





Need to understand the difference. →more statistics

Summary & future

- Need to fix Energy resolution and Skew factor for this fitting method.
  - Histograms/pull are improved before.
- Need to determine these values with more data.
  - Resolution : Compton edge.
  - Skew factor : 0.0
- There still exists the difference between Polarization from LEFT/RIGHT.
  - Not understand the reason.

  →Try to find it with more statistics (a couple of months)