

Offline analysis status



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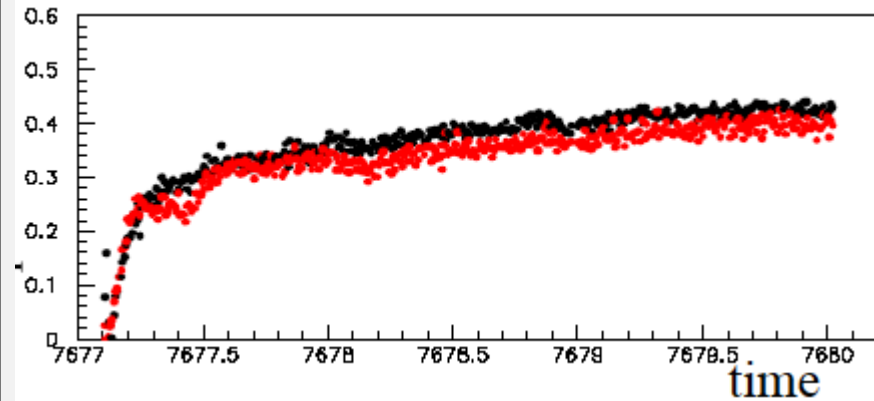
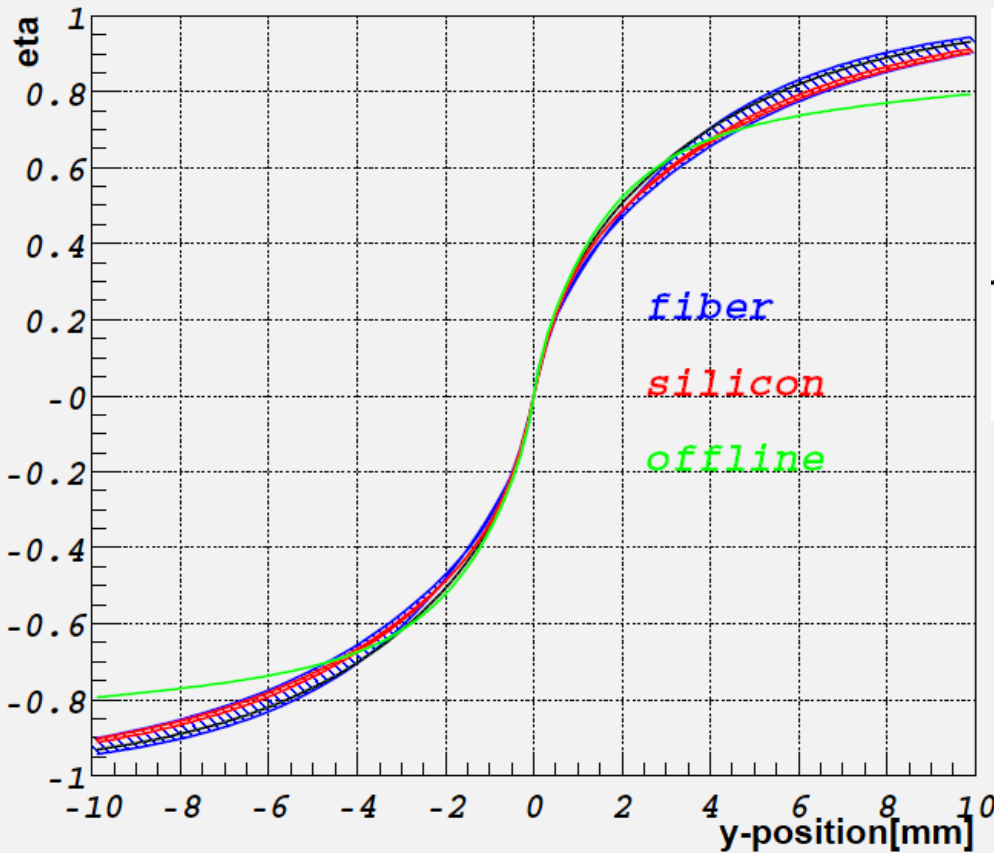


- With "old" offline method.....
 - in eta-y free& fixed.
 - Study parameters which should be fixed.
 - Beam size, $(S1R+S1L)/2$.
 - Check beam size dependence.
 - Correlation L/T vs beam size.
- With "new" offline method.....
 - in eta-y free.
 - Study on the eta-range dependence
 - Check correlation
- Summary & future

"Old" offline method

- Three fit
 - Energy resolution
 - (R+L) for calibration
 - (R-L) for polarization
- 15 parameters are included
 - linear component of laser(S1),
circular component of laser(S3),
eta-y(5parameters), resolution,
offset(y,eta),beamsize,
normalization, distance.

eta-y parameters::free



Red:offline results

Black:LPOL online

Still LPOL/TPOL ~ 1.1

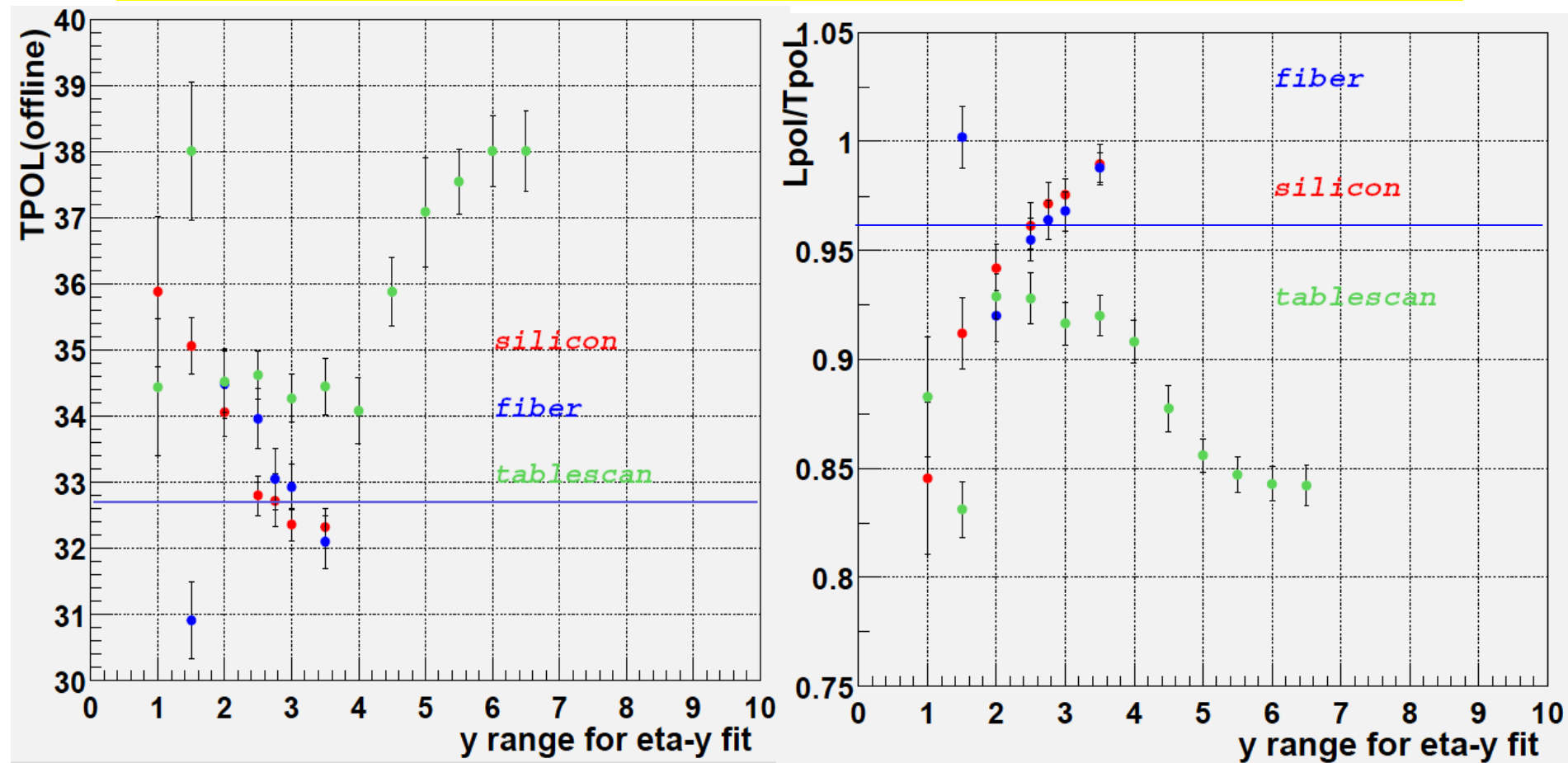
Reason that the difference between LPOL and TPOL seems to exist in eta-y parameters.

→ these parameters fixed.

eta-y fixed

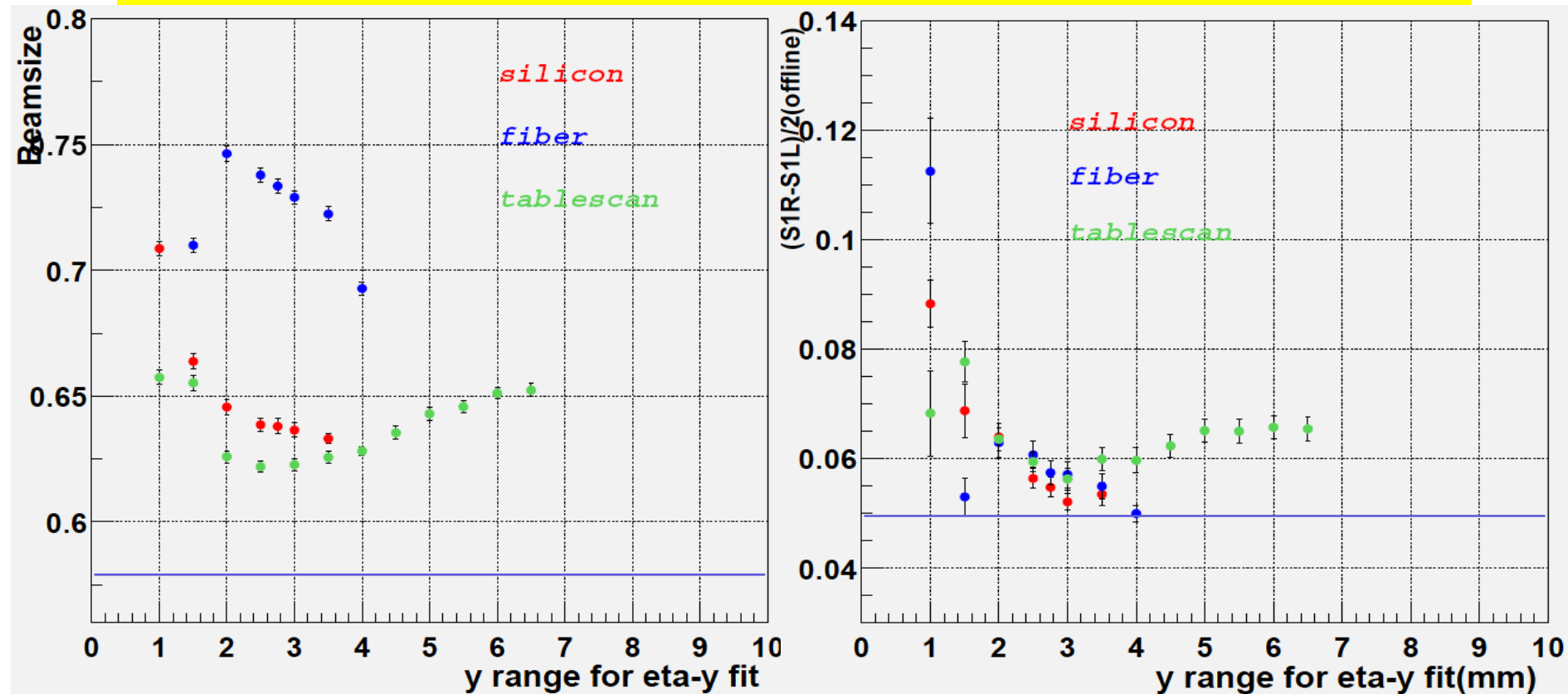
- Study on the y-range dependence
 - To check stability of the offline method.
- CAL data sample
 - 7th.Mar.2004
- Source of eta-y curve
 - Si/Fi.(7th.Mar.2004)
 - table scan(27th.Apr.2004)
 - Extract eta-y 3 parameters
→into the offline analysis.

eta-y fixed



Offline method is unstable in y whatever eta-y curve is used.

eta-y fixed

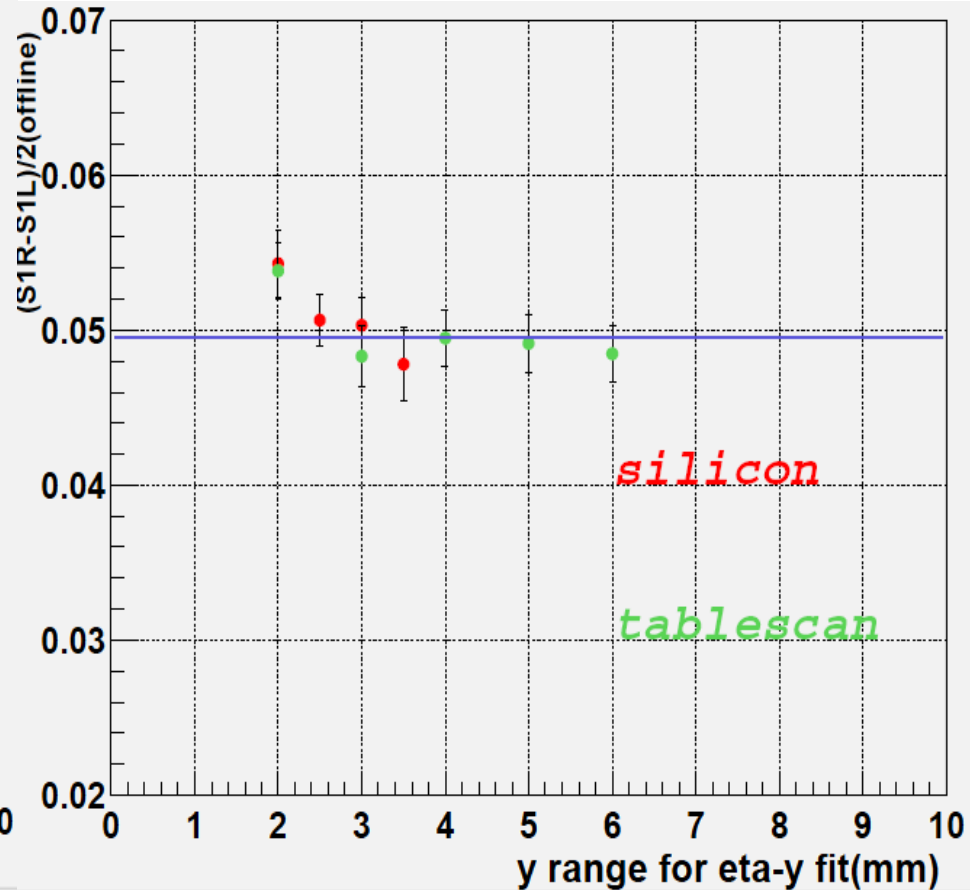
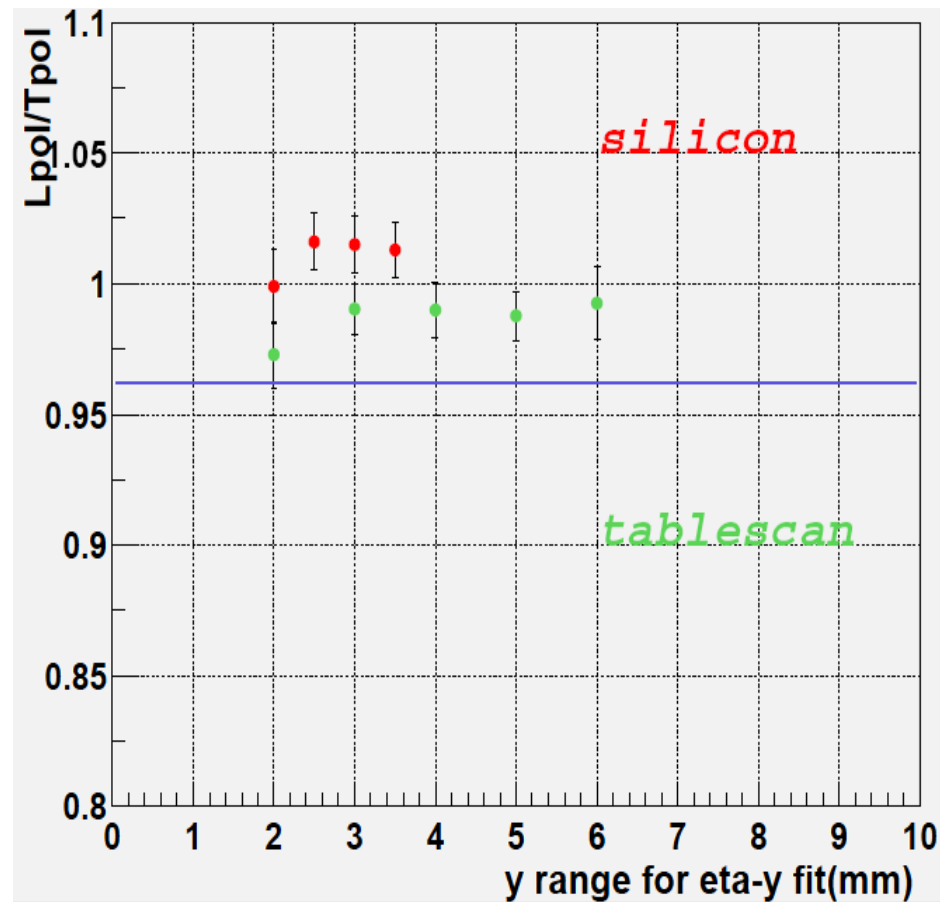


Beam size has most strange behavior in different eta-y curves, and deltaS1 is somehow stable even when other parameters are unstable. → beam size and linear component are remarkable.

Beam size & sumS1 fixed

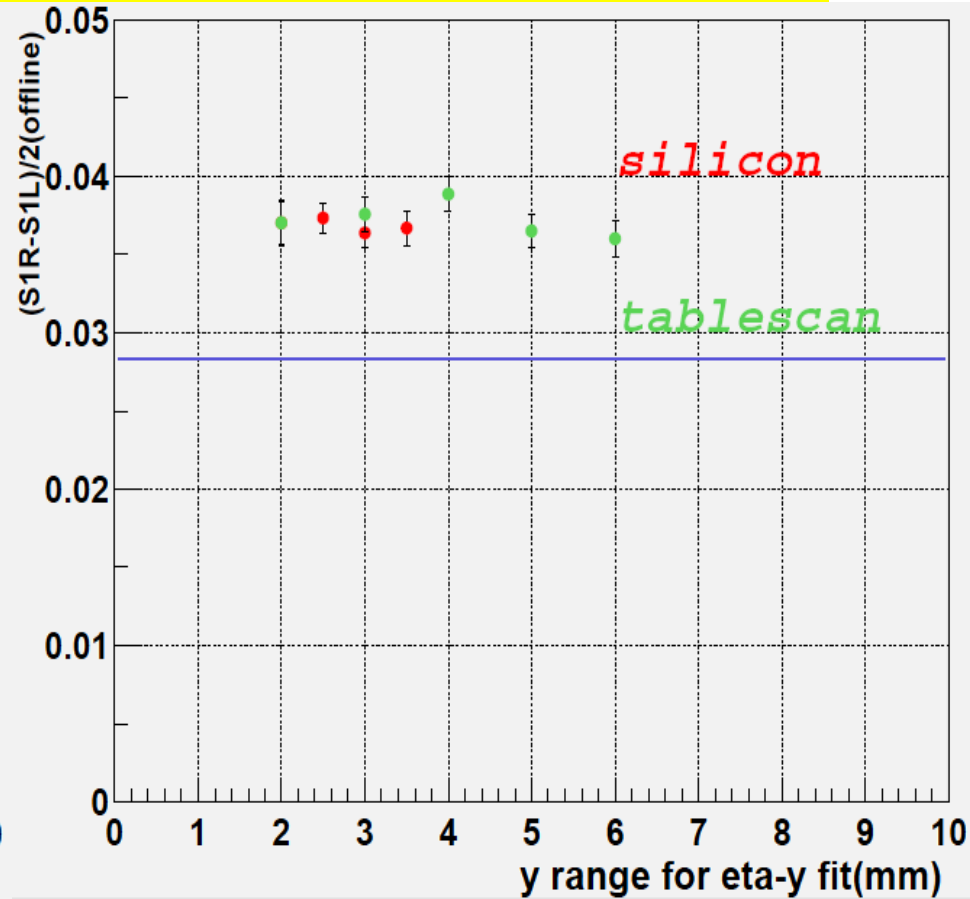
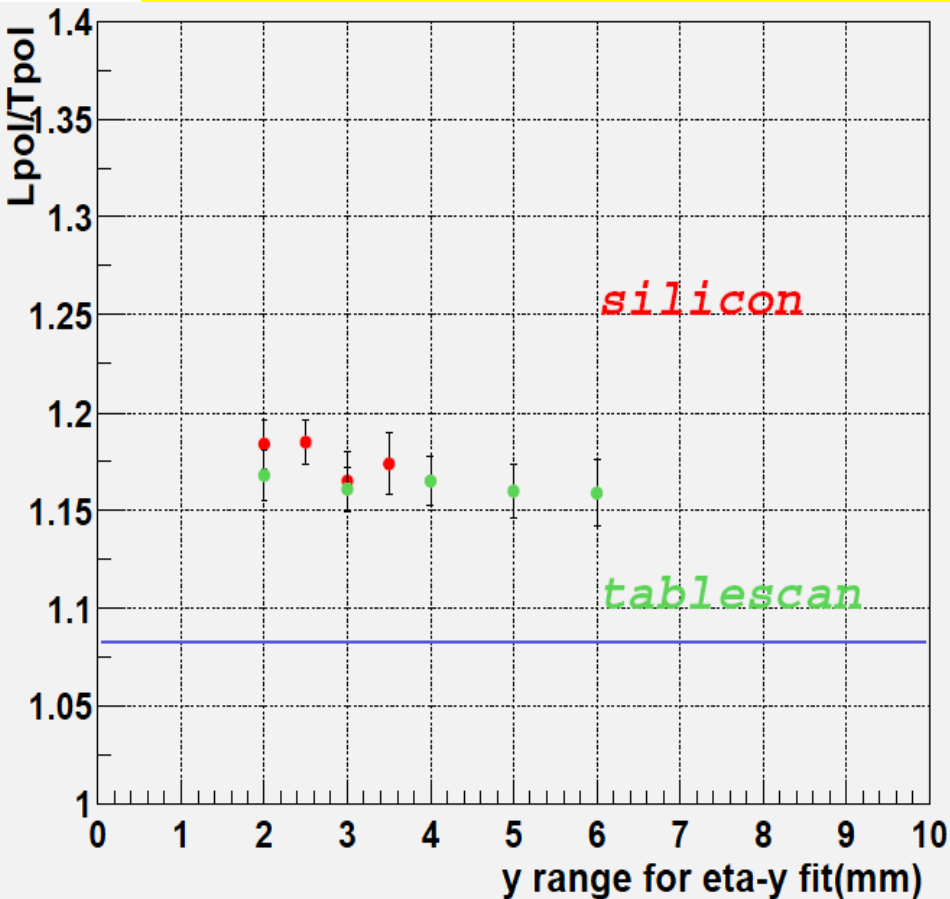
- eta-y parameters
 - From silicon, table scan → fixed
- Beam size
 - From online analysis → fixed
- $\text{sumS1}::((\text{S1R}+\text{S1L})/2)$
 - extract from first minute data.
 - fixed to the rest of data with the value
- Check with some CAL data.
 - 7th.Mar.2004.
 - 31st.Jan.2004.
 - 20th.Jan.2004.

7th.Mar.2004



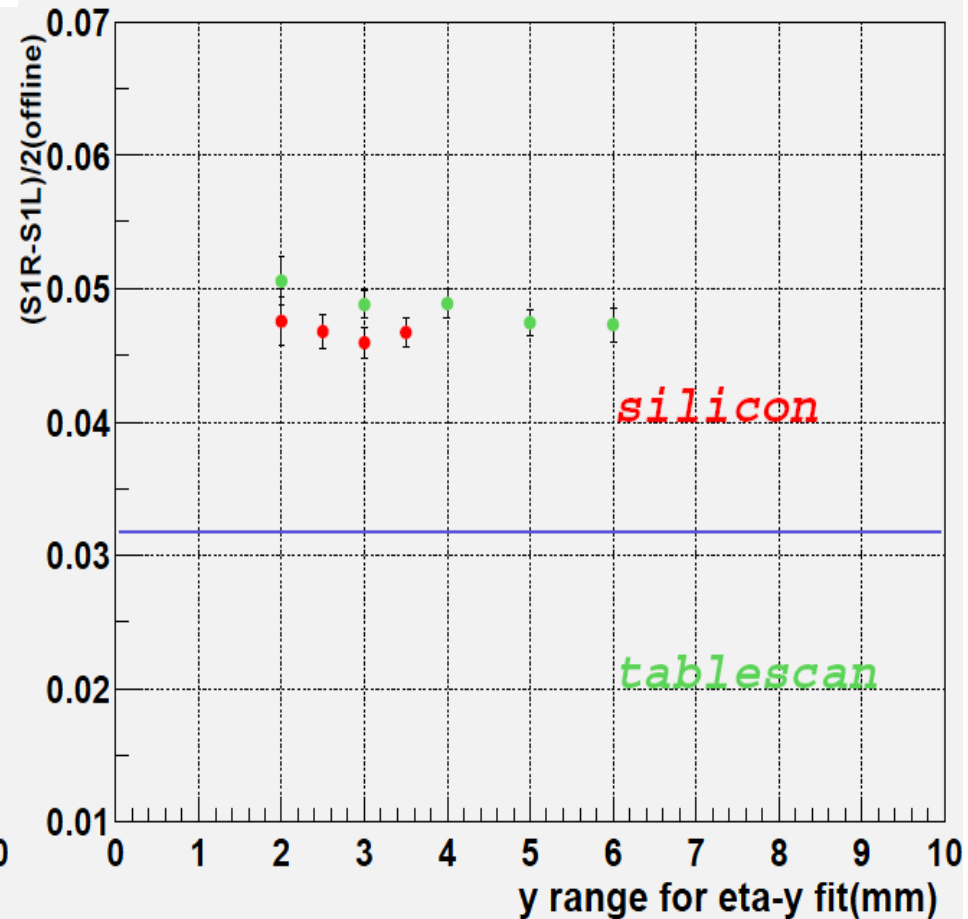
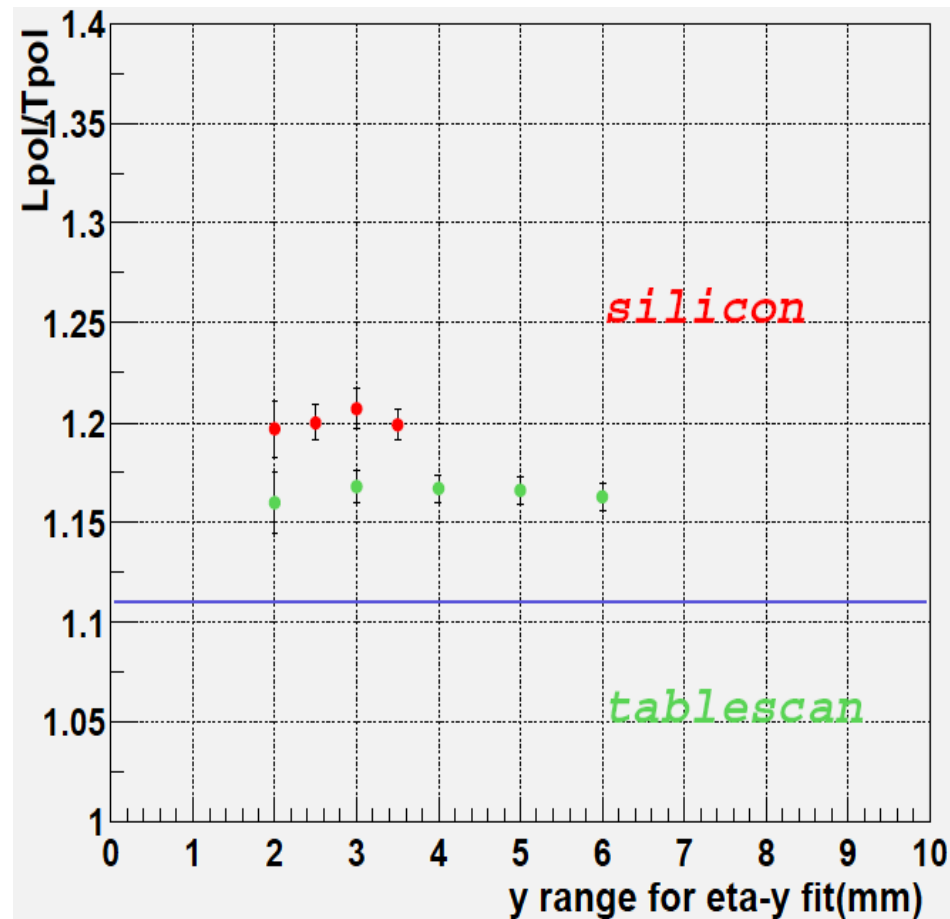
Offline is stable in y with η - y & beam size & sumS1 fixed.

31st.Jan.2004



Stable in y , both silicon and table scan.

20th.Jan.2004

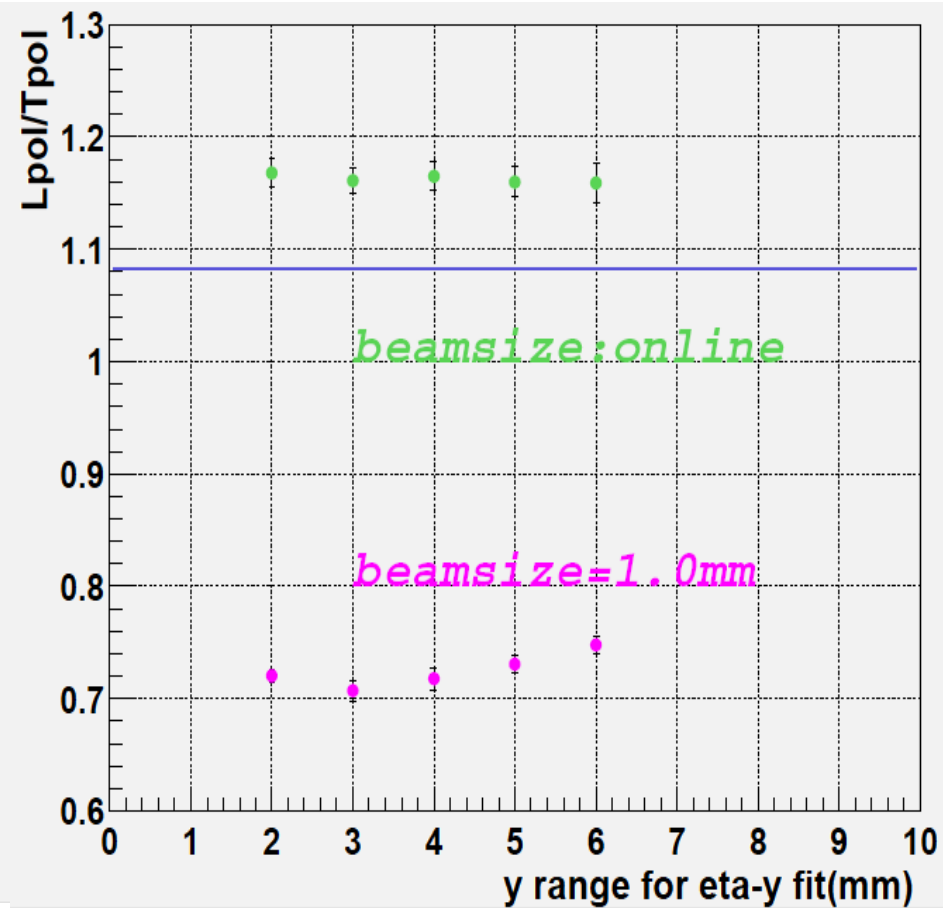
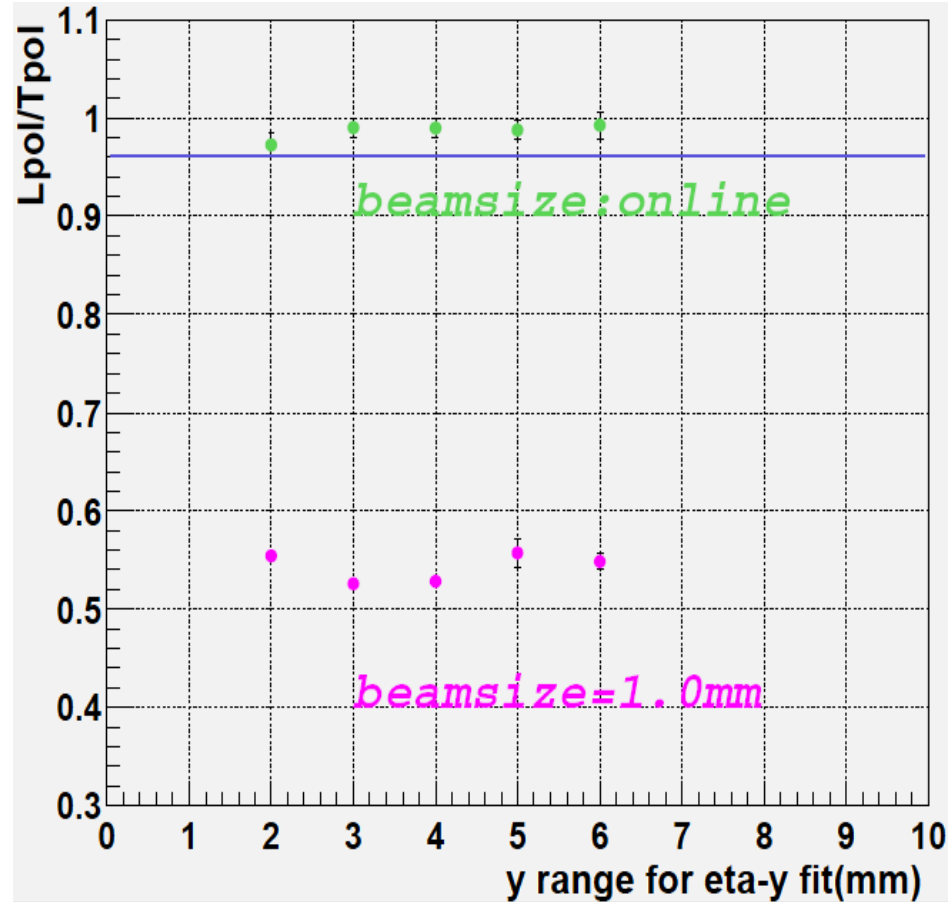


For some CAL data, under these condition,
the method is stable.

Study on the beam size dependence

- Check how impact on offline method with different beam size.
 - eta-y parameters
 - Table scan
 - CAL data sample.
 - 7th.Mar.2004.
 - 31st.Jan.2004.
 - fixed beam size.
 - online analysis.
 - 1.0mm

7th.Mar. and 31st.Jan

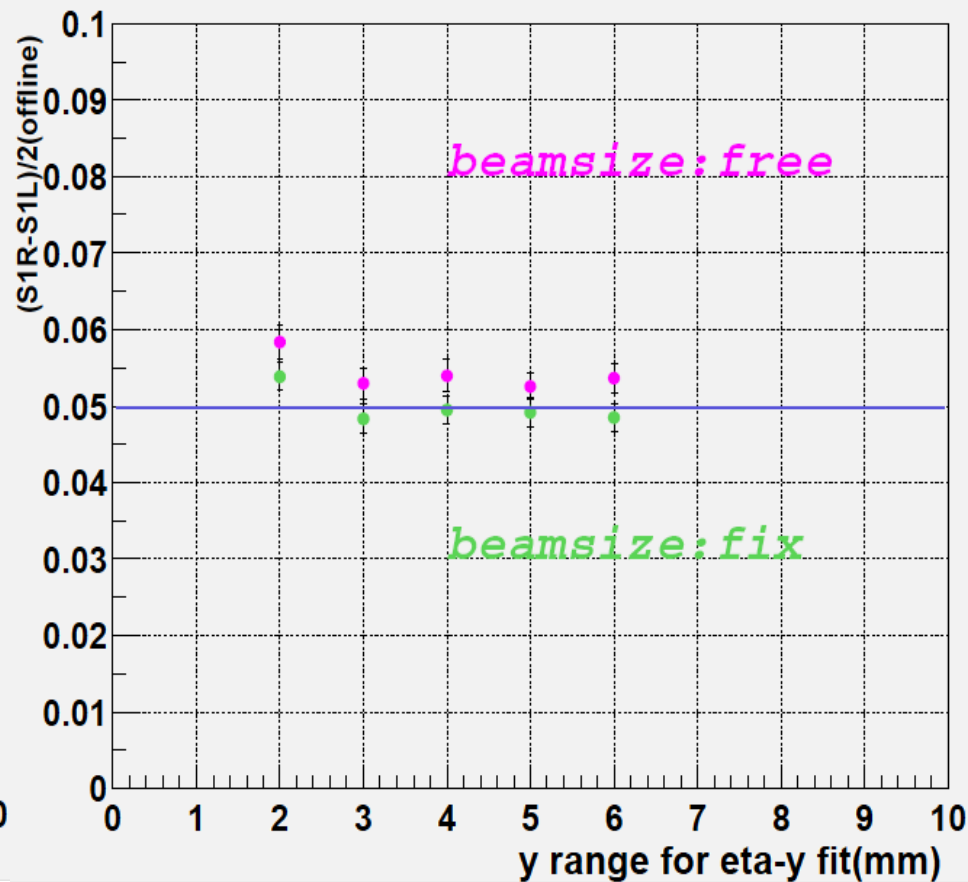
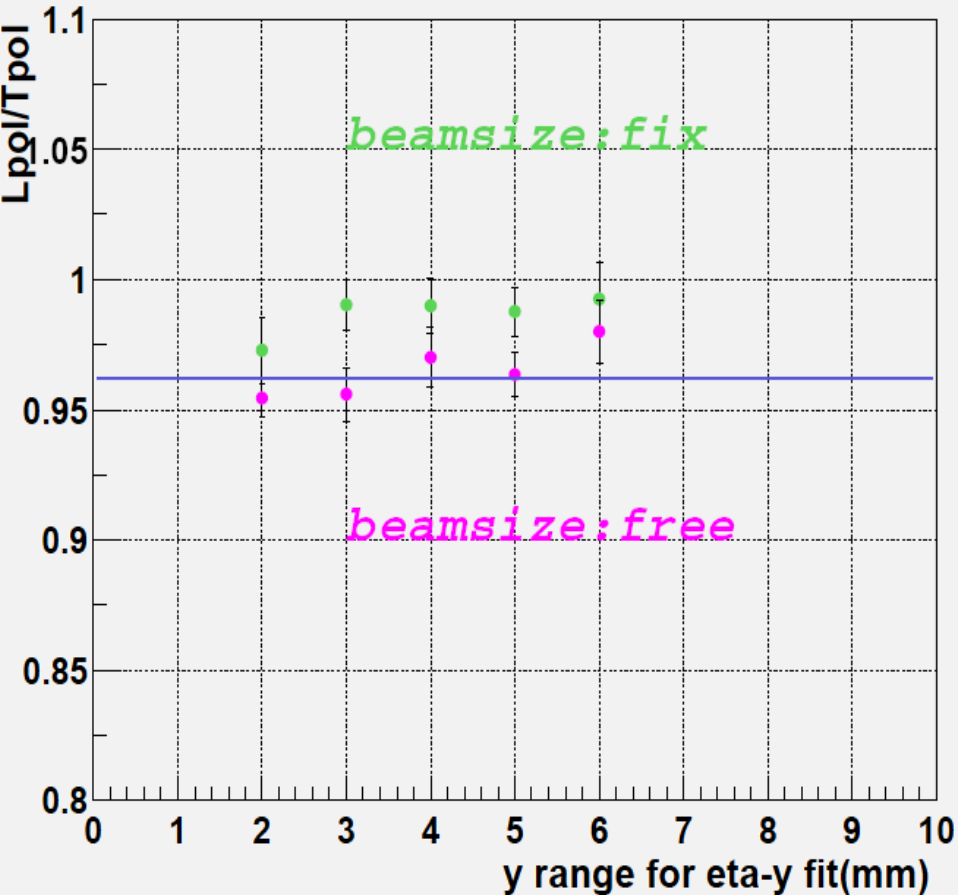


Offline method has strong correlation on the beam size.

Beam size free & fixed

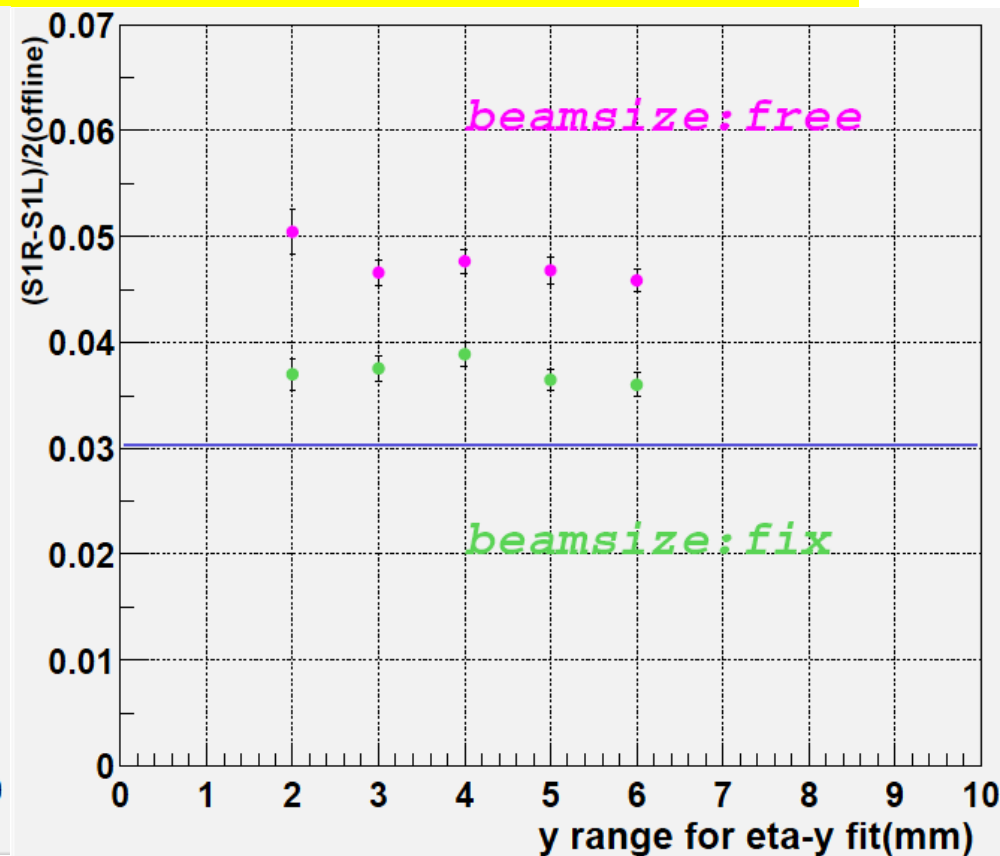
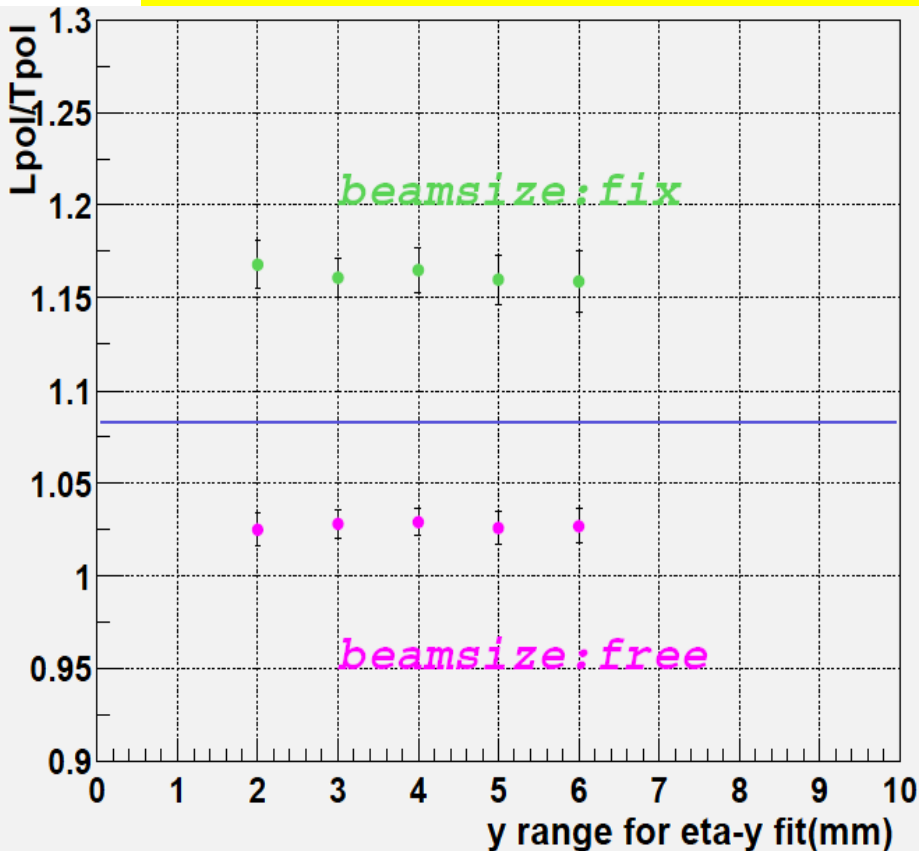
- Purpose
 - To check the stability of offline method even when beam size is free.
 - If stable, see if the method can estimate the beam size.
- Fixed beam size
 - Focus ---from online analysis.
- CAL data sample
 - 7th.Mar.2004
 - 31st.Jan.2004

7th.Mar.2004



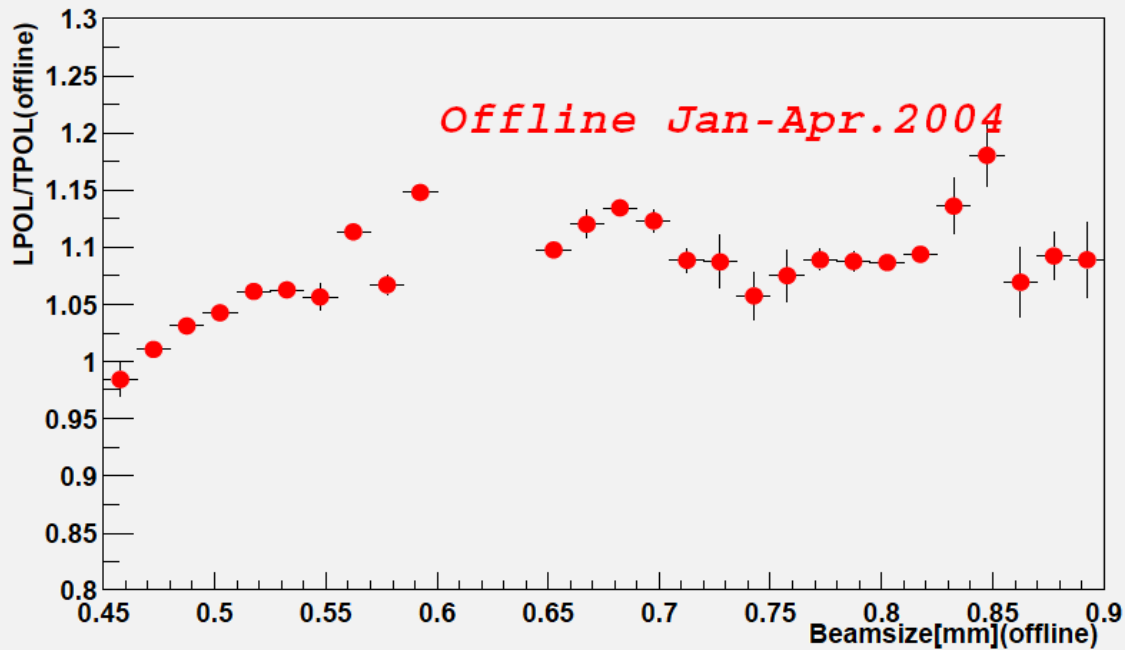
In case of beam size is free, offline method is stable.

31st.Jan.2004

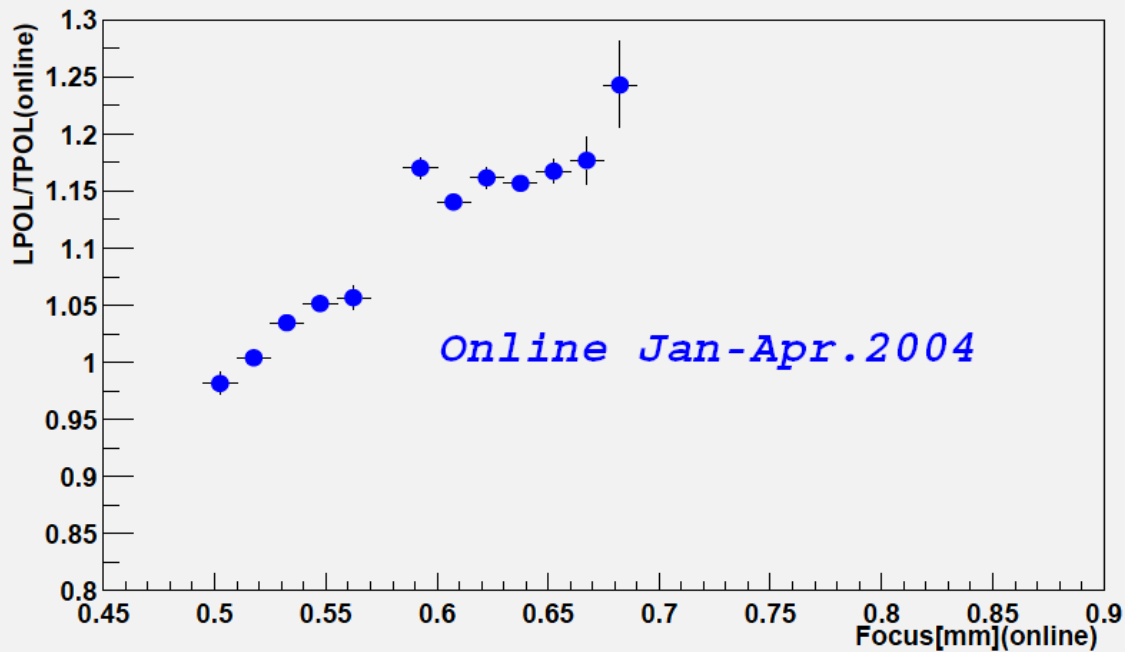


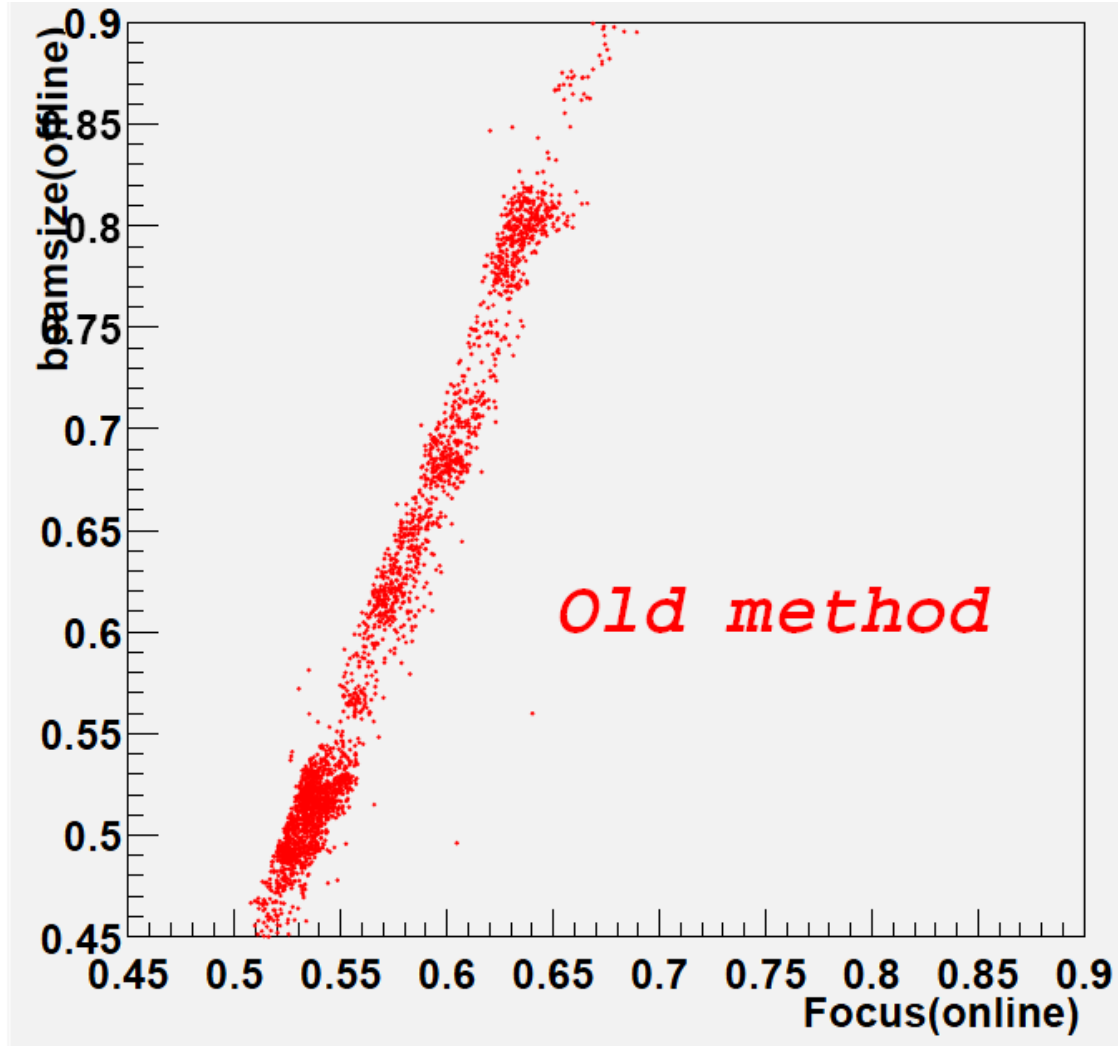
In both cases, free and fixed, offline is stable anyway.

→ It seems to be OK without beam size fixed.



- With sumS1 & eta-y fixed, the offline method can weaken beam size dependence.





Actually, there is correlation between offline and online, seems to be OK. But, the "old" method can not absorb beam size dependence.

Short summary

- The offline method is unstable, unless η -y and sumS1 are fixed.
- Though the offline method is stable, it can not completely absorb the beam size dependence.
 - There seems to exist the limitation of "old" method for offline analysis.



New method !!

“New” method

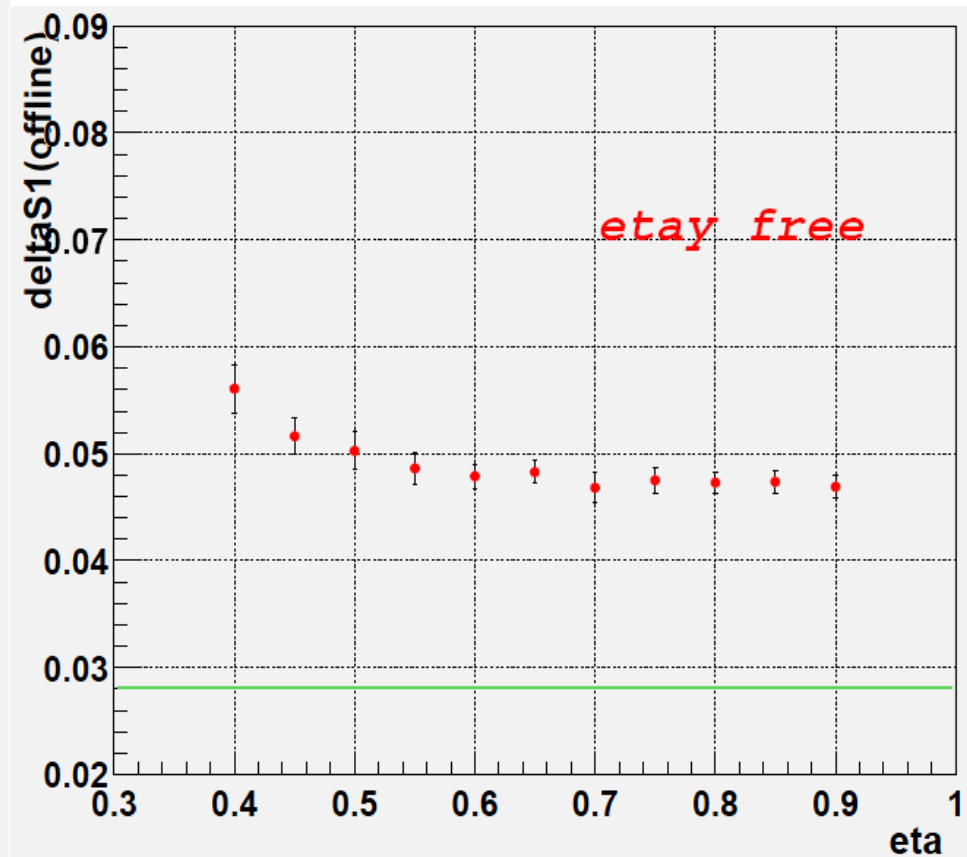
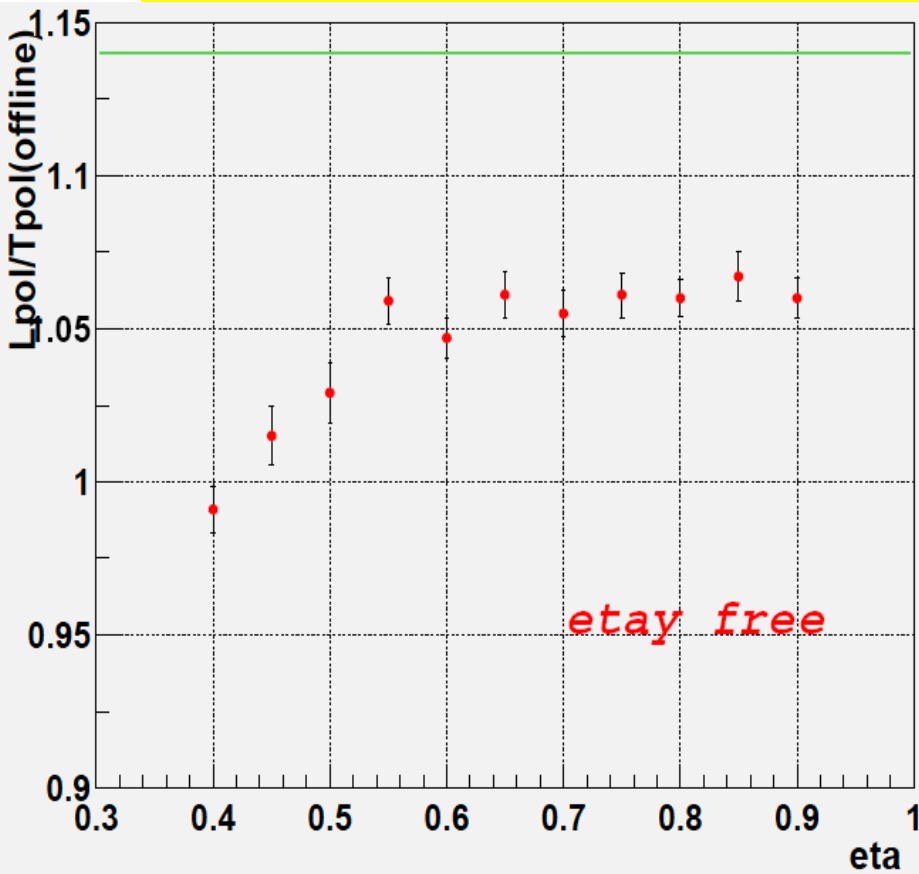
by S.Schmitt(H1)

- One fit
 - two helicity state(L), (R), at the same time.
- Feature
 - Correlations of all parameters are reflected to the results properly.
 (“old” method has 3 times fitting, so it seems not to transmit some correlations).
 - Take less time than before.

eta-range dependence

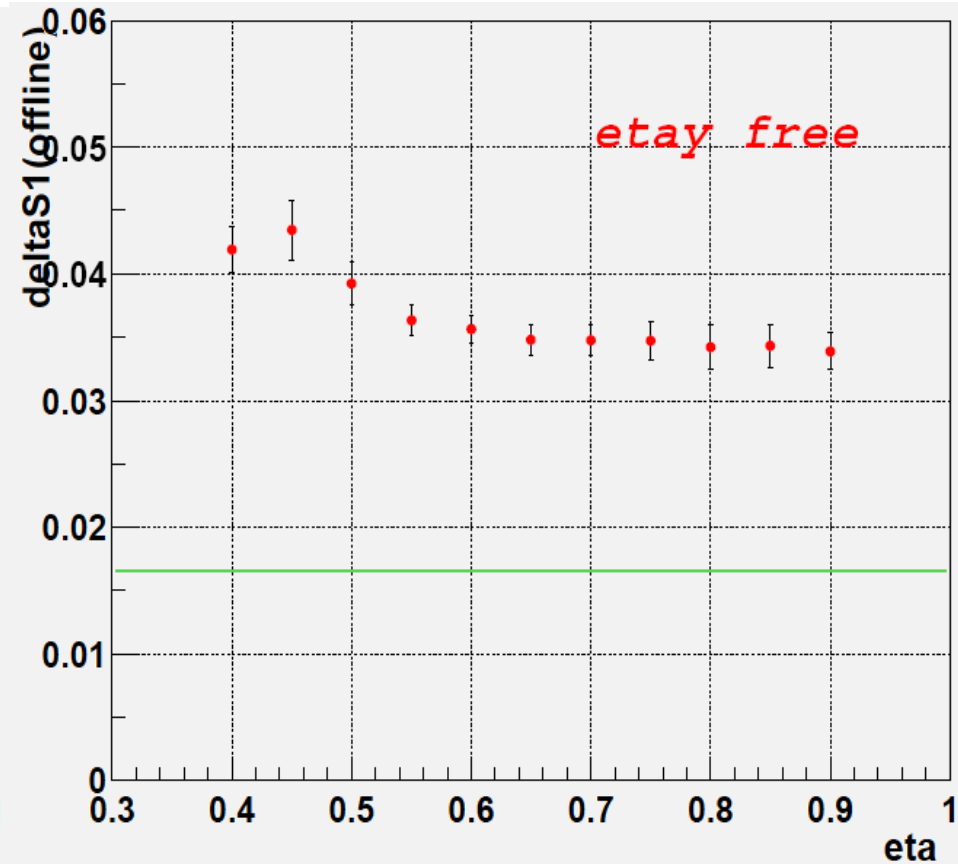
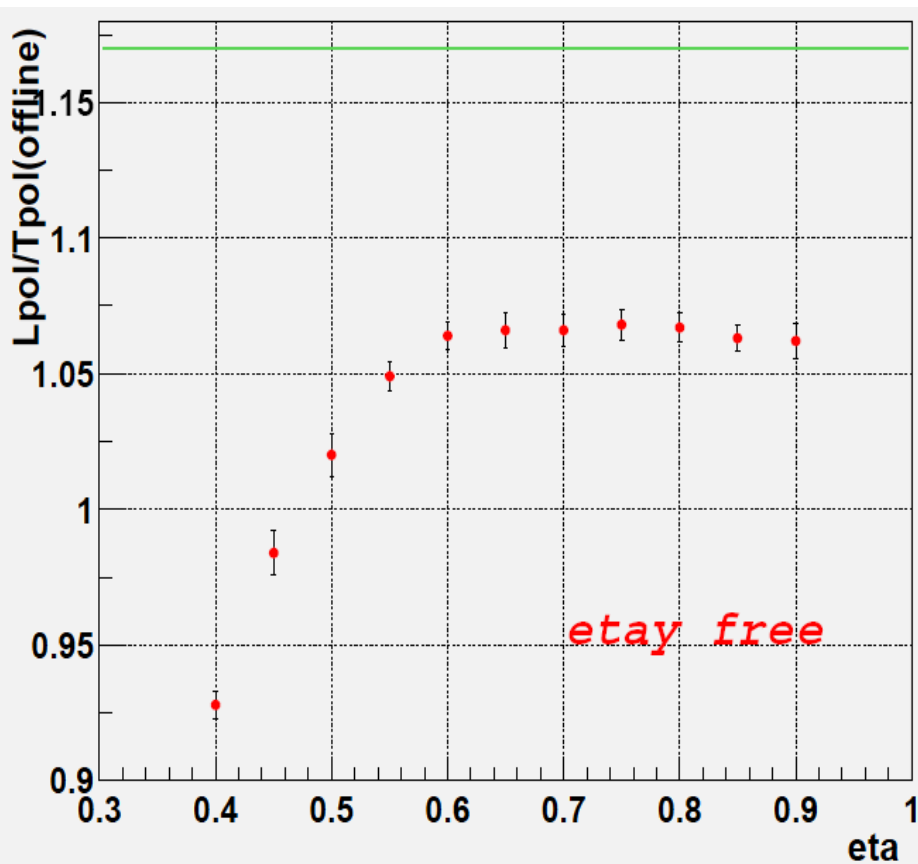
- Purpose
 - To Check the stability of new offline method against eta.
 - eta-y parameters :free
- CAL data sample
 - 31st.Jan.2004
 - 25th.Feb.2004
 - 1st.Mar.2004

31st.Jan.2004



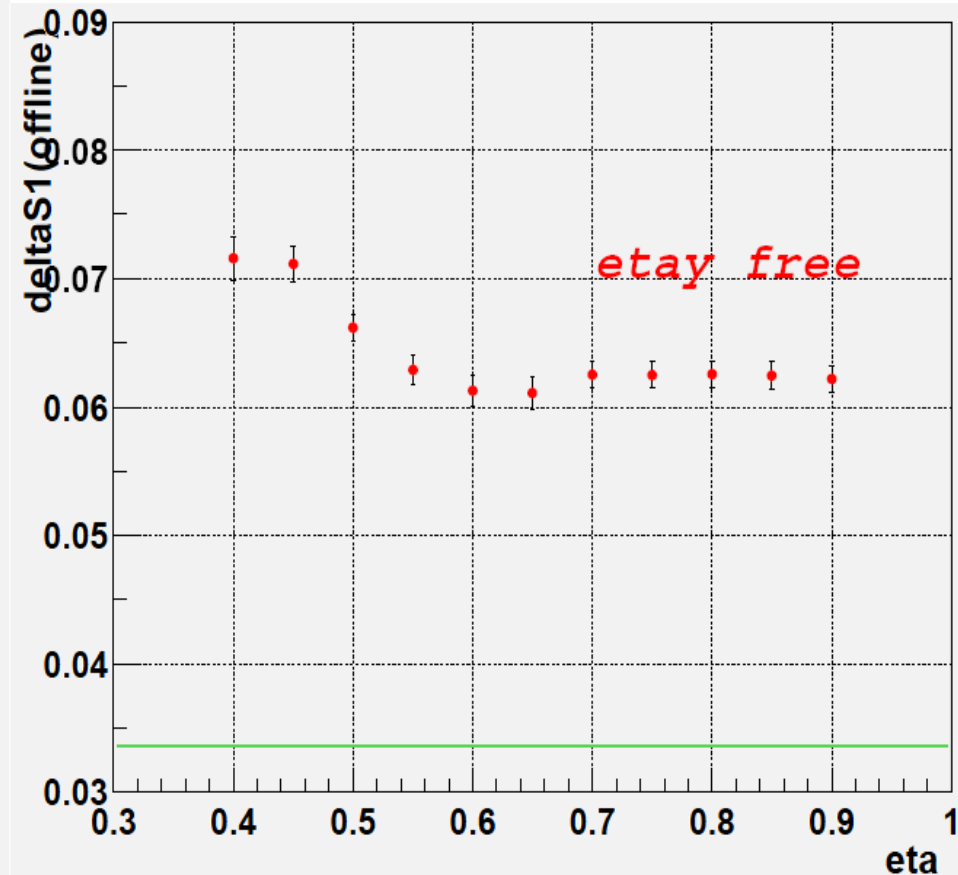
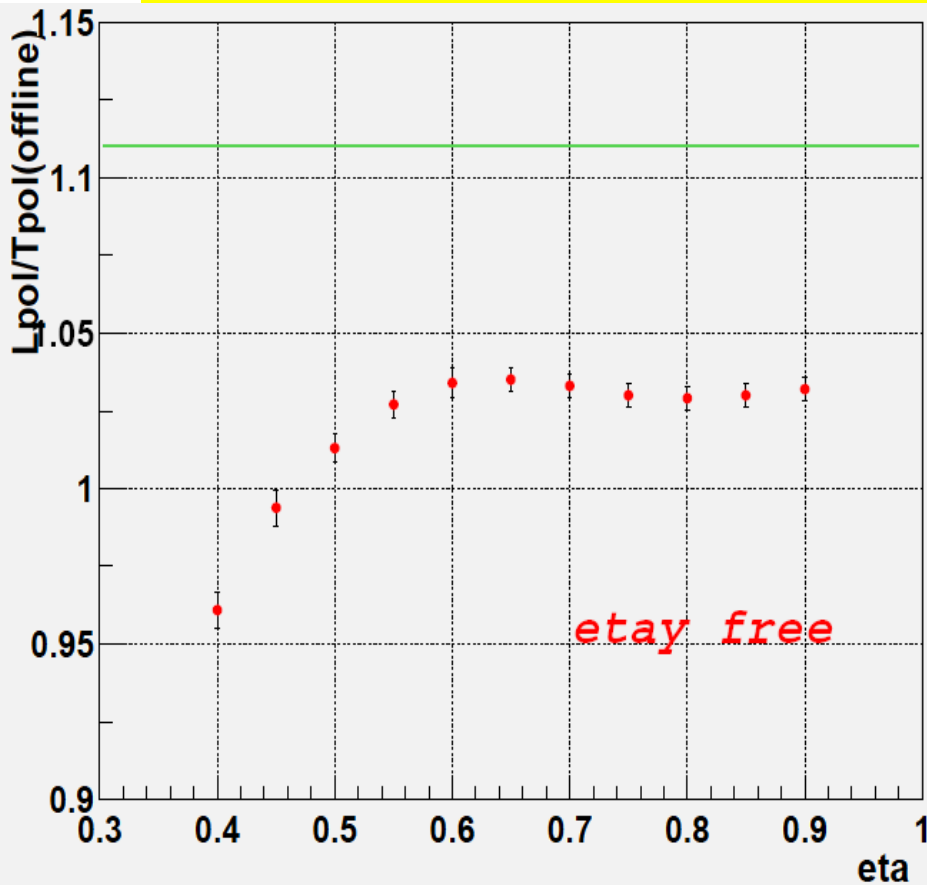
In reasonable η region, new offline method is stable with η -y free.

25th.Feb.2004

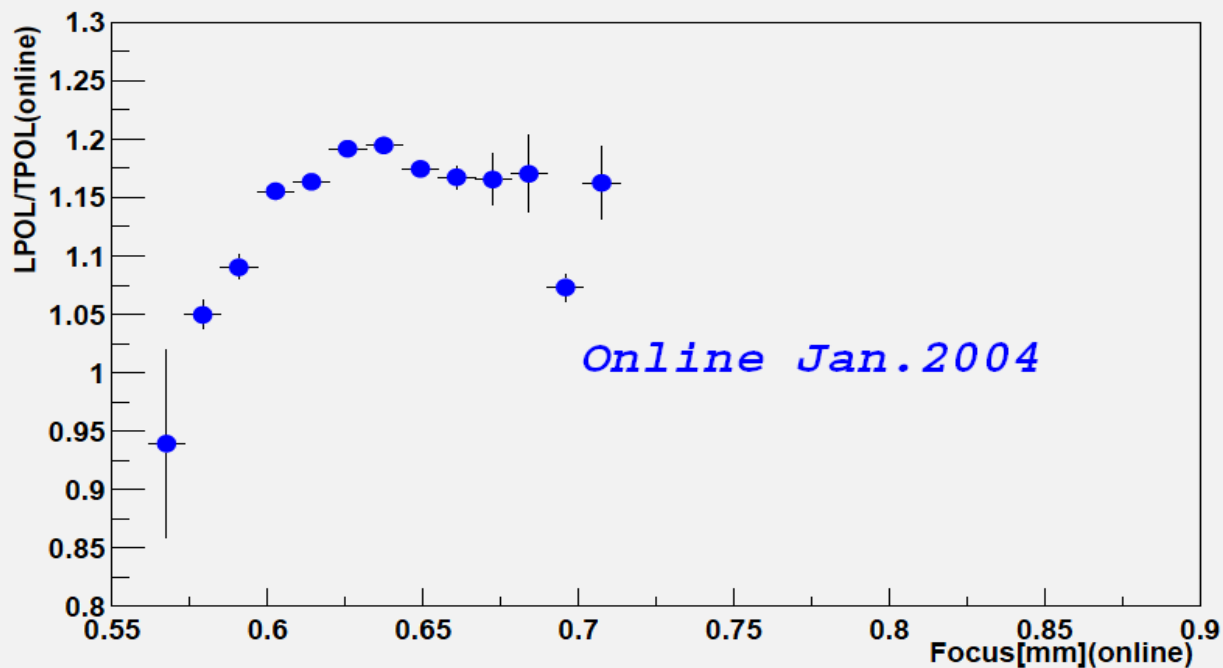
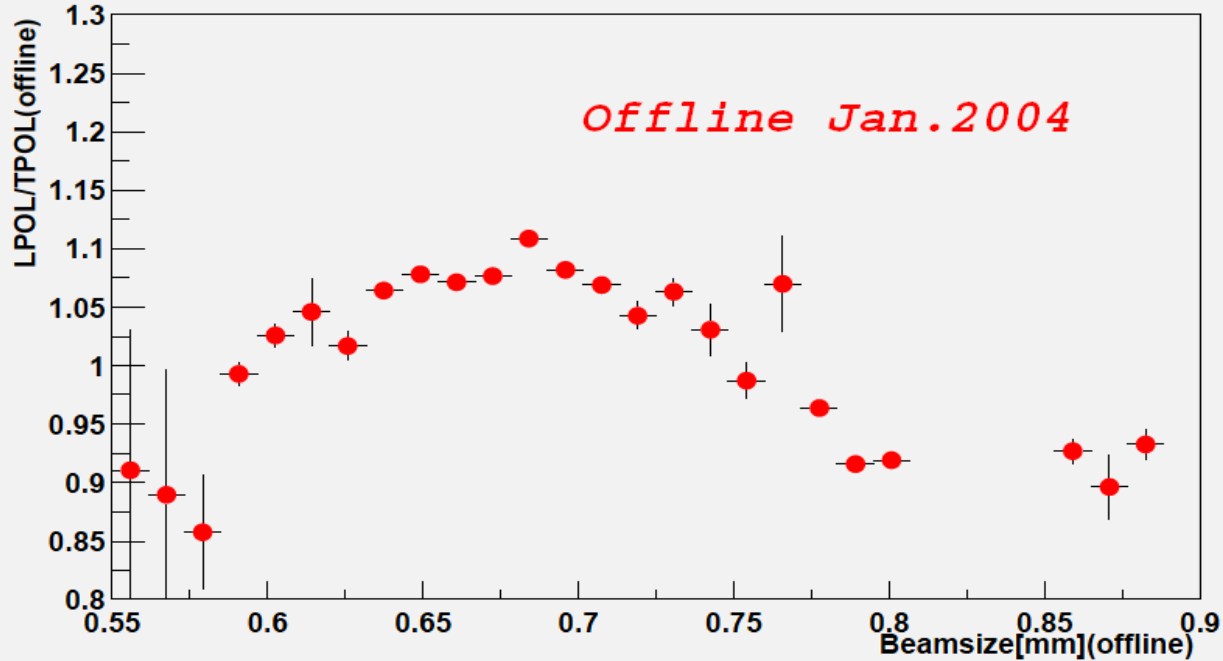


New method is stable with eta-y free.

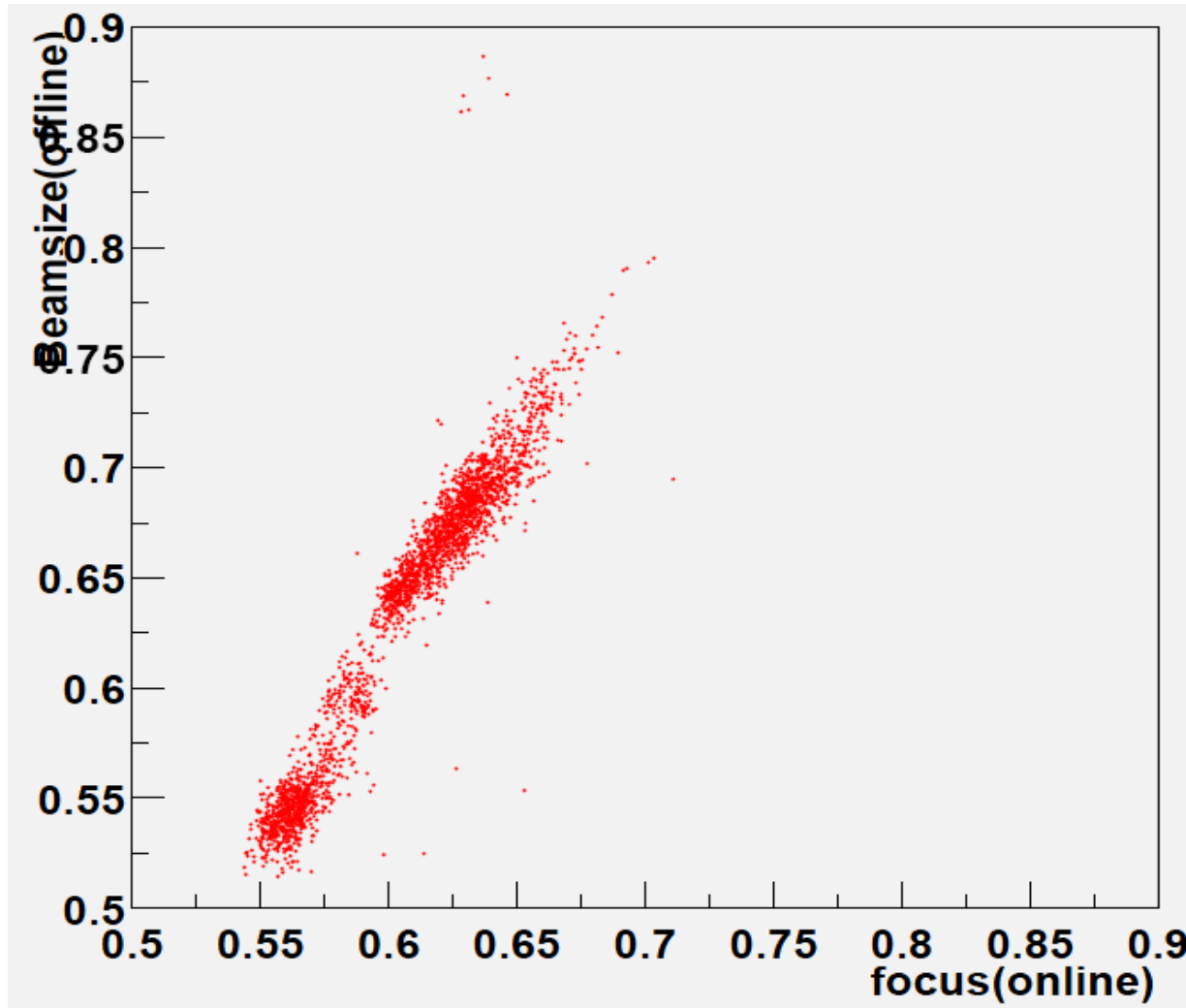
1st.Mar.2004



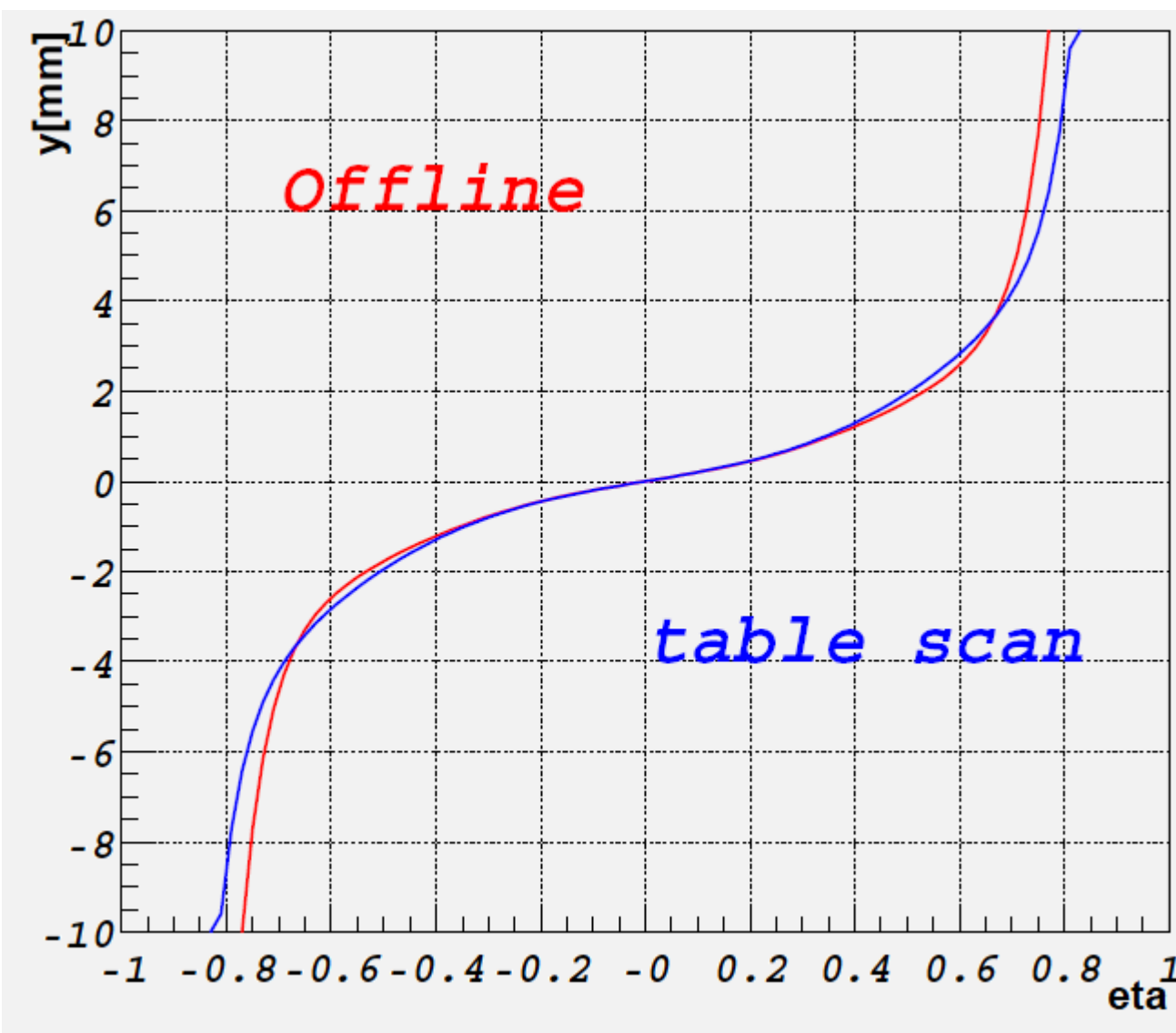
For some CAL data, the method is stable with eta-y Parameters free.



With eta-y free,
the new offline
method can not
absorb beam size
dependence yet.



There is correlation between offline and online.
Beam size from offline is meaningful somehow.



There is difference between offline and silicon measurement.
This problem is same as "old" method → needed eta-y fixed.

Summary & future

- The new offline method has no eta-range dependence with eta-y parameters free.
- Still, there exists beam size dependence.
- eta-y parameters from new method is different from silicon.
→ eta-y fixed.