



Estimation of the efficiency of small CSCs in Xenon run

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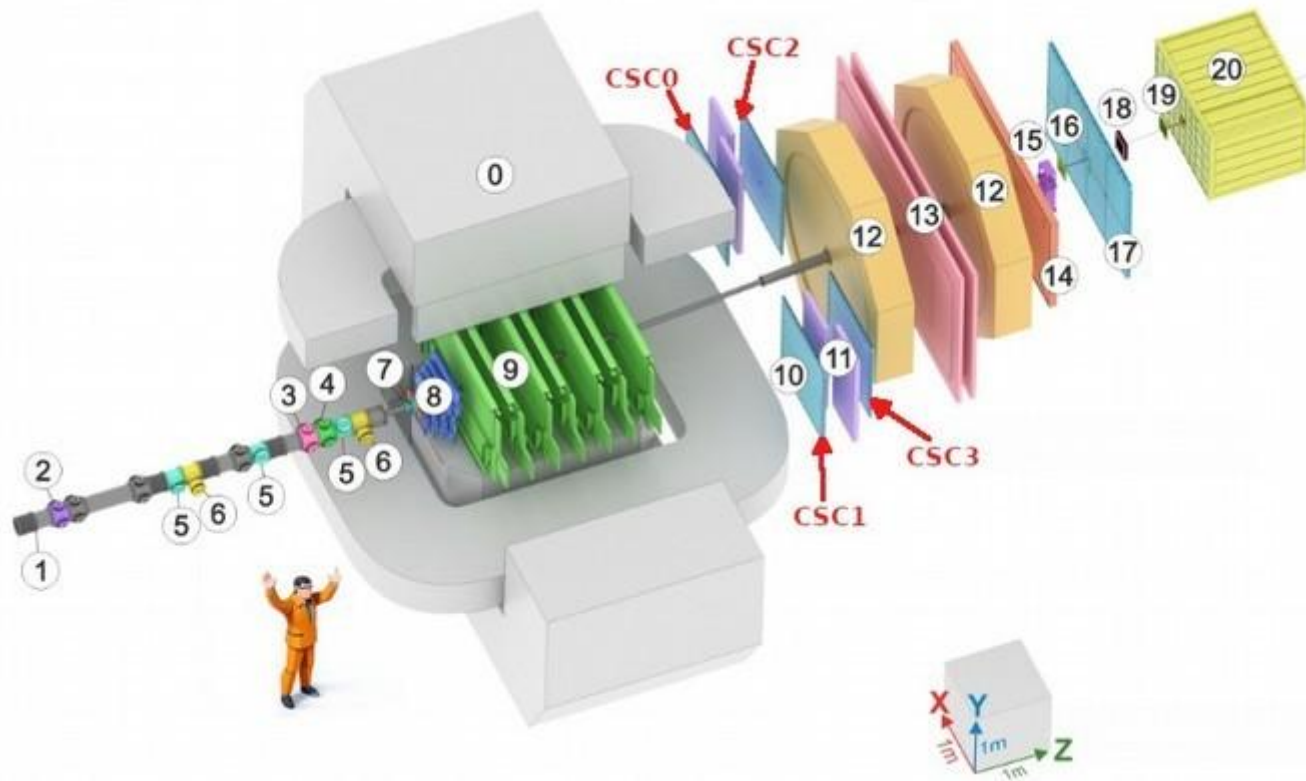
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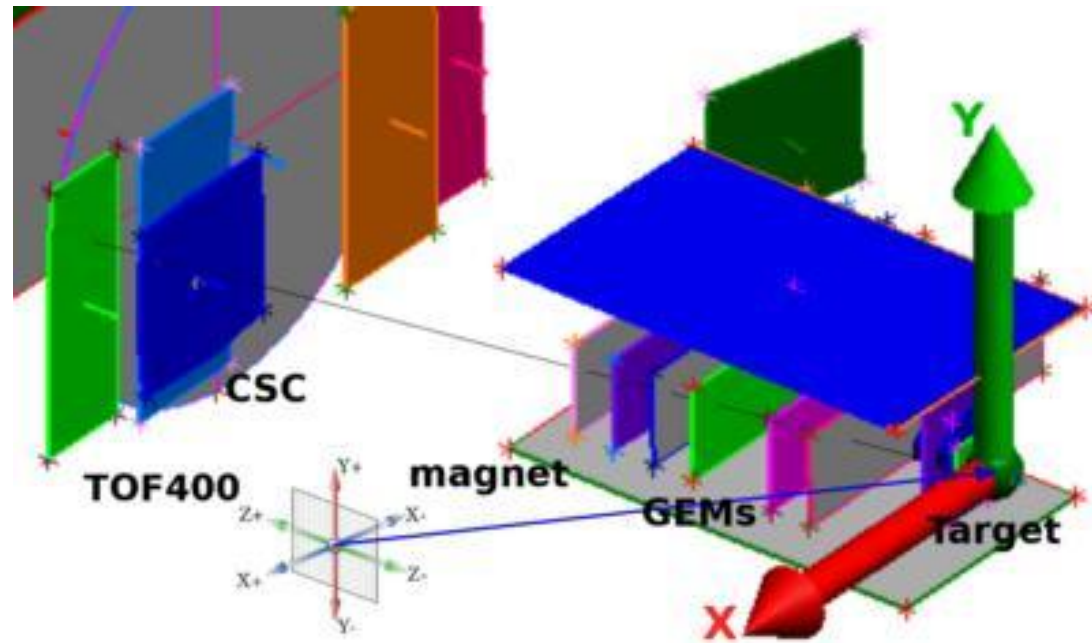
BERDS meeting
24.04.2024, Dubna, Russia

1. Small CSCs numbering
2. Matching and cuts
3. Efficiency of small CSCs
4. Plans

Small CSCs numbering



The four small CSCs are indicated by red arrows. Top module – 0, bottom - 1

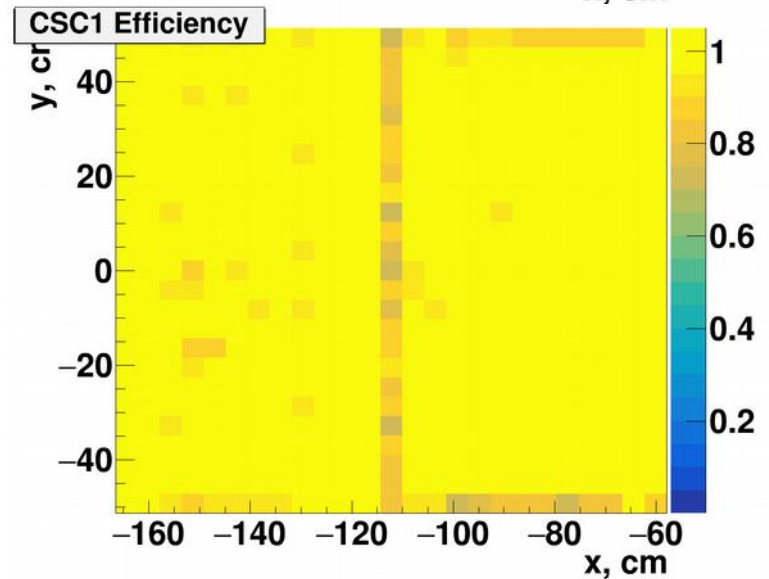
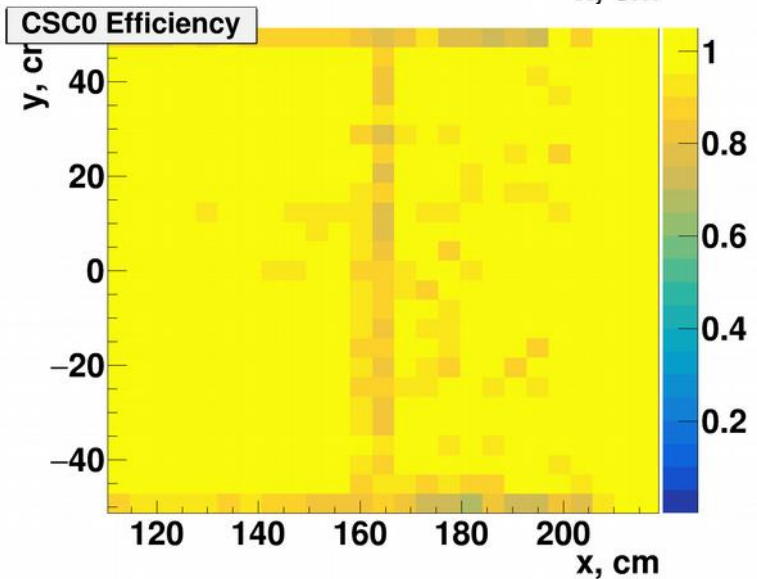
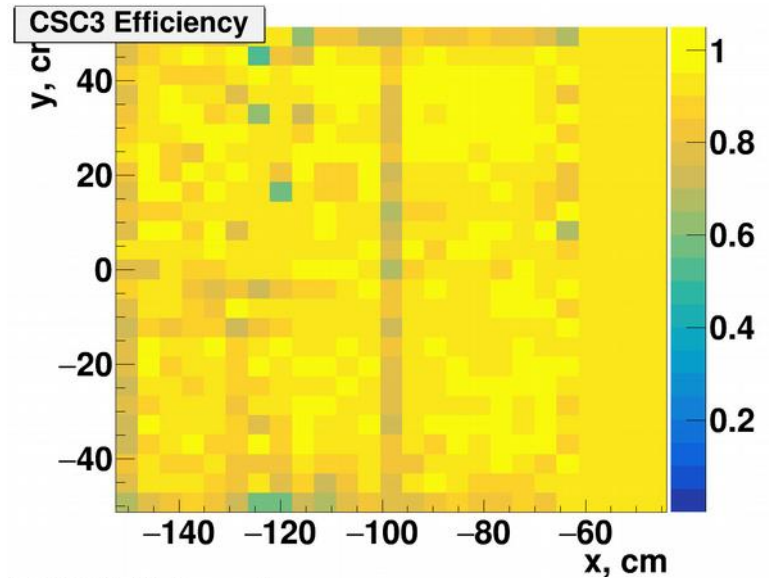
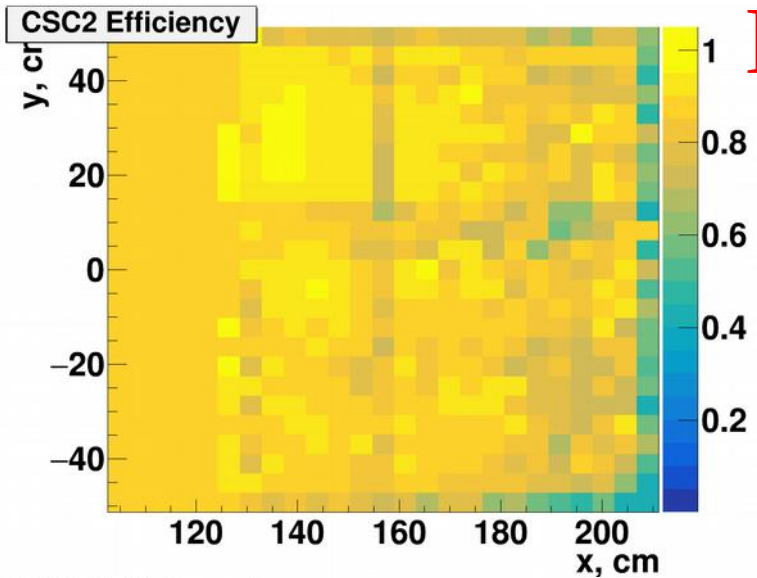


- ✓ $|p| > 1 \text{ GeV}/c$
- ✓ $N_{\text{GemHits}} > 5$
- ✓ $|\Delta_{X(Y)\text{ToF-400Hit-Track}}| < 2 \text{ cm}$
- ✓ $|\Delta_{X(Y)\text{CSCHit-Track}}| < 6 \text{ cm}$ (all CSC hits)
- ✓ $|\text{DCA}_{X(Y)\text{PV}}| < 3 \text{ cm}$
- ✓ If numerator=1, coordinates from CSC hit

Efficiency (run 7842)



Beam



Run	N_0	CSC0, $\varepsilon, \%$	CSC1, $\varepsilon, \%$	CSC2, $\varepsilon, \%$	CSC3, $\varepsilon, \%$
	7498	96.33 ± 0.12	98.29 ± 0.06	88.48 ± 0.23	91.80 ± 0.16
	7842	96.72 ± 0.06	97.35 ± 0.05	86.85 ± 0.12	91.90 ± 0.10
	8305	97.37 ± 0.04	98.32 ± 0.04	86.91 ± 0.11	92.62 ± 0.09

$$\sigma_\varepsilon = \sqrt{\varepsilon(1-\varepsilon)/N}$$

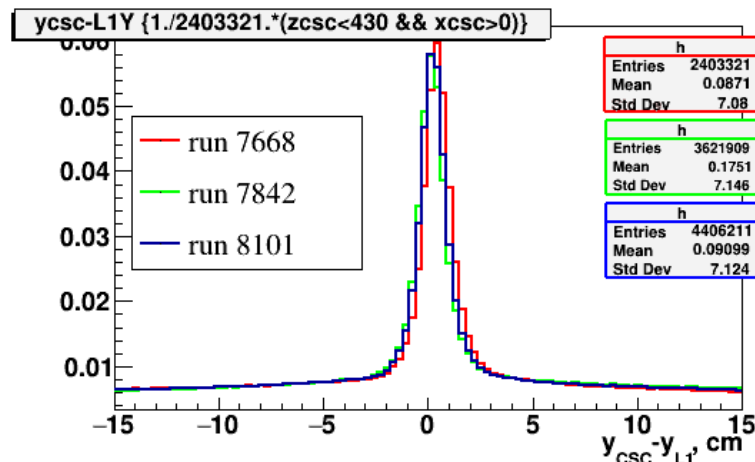
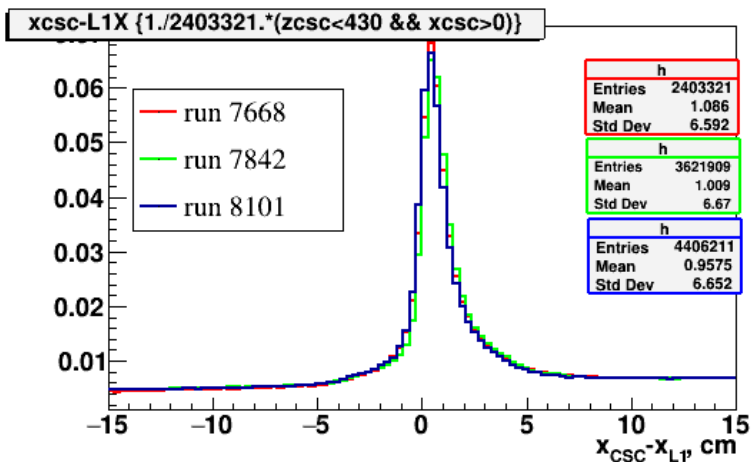
1. Get the dependence of efficiency on the run number
2. Look at the correlation between efficiency and voltage
3. Analyse the dependence of efficiency using LogBook

Thank you for attention!

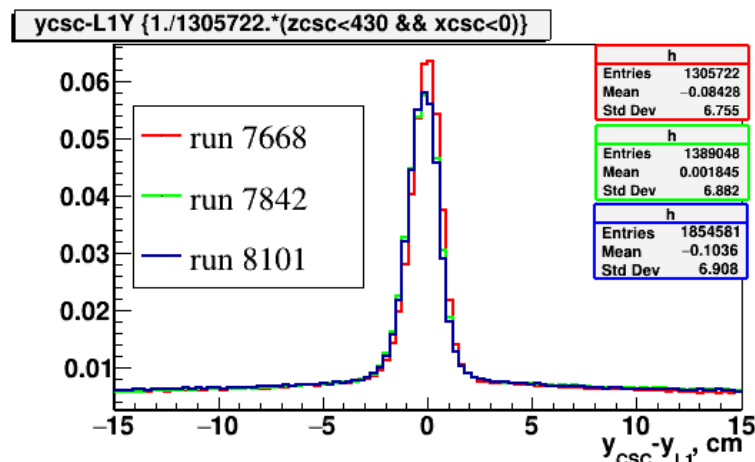
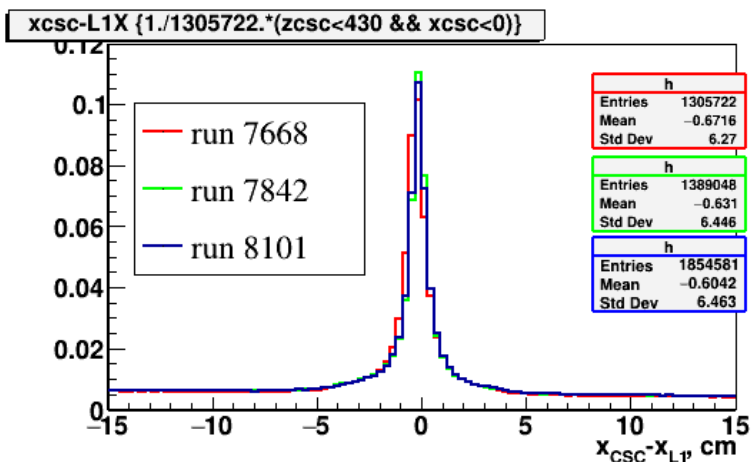
Backup



CSC residuals

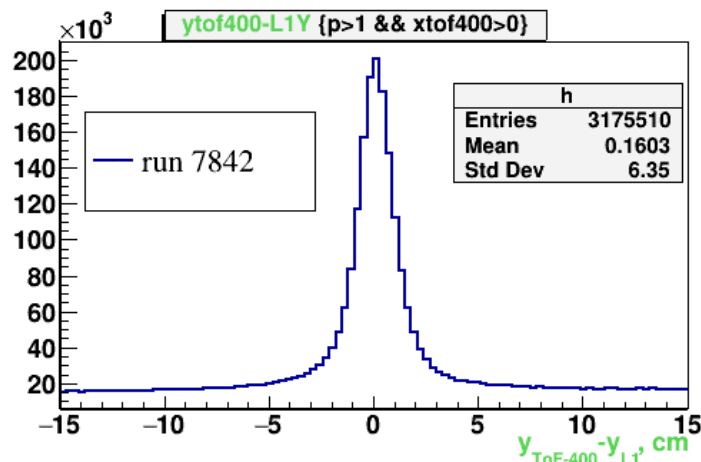
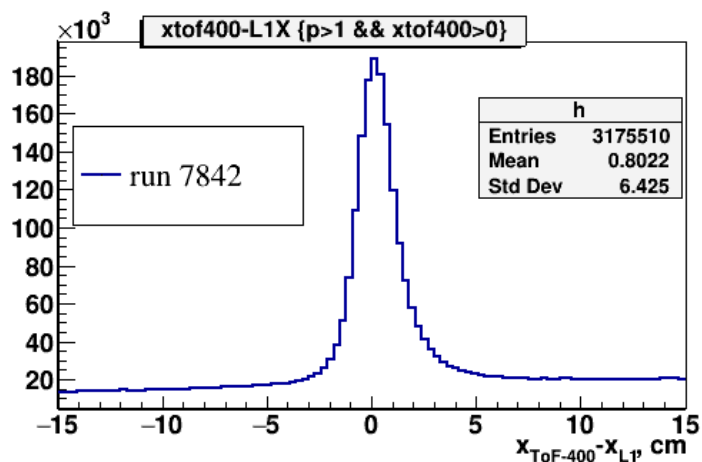


CSC0

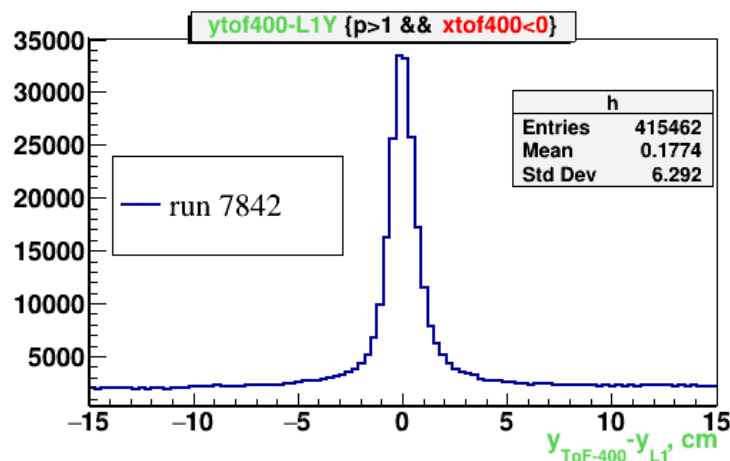
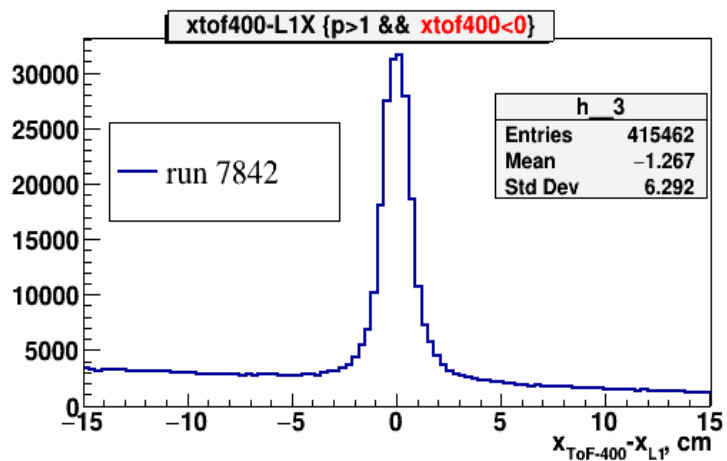


CSC1

ToF-400 residuals



$x > 0$



$x < 0$

