BM@N off-target analysis (run 8)

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Event selection

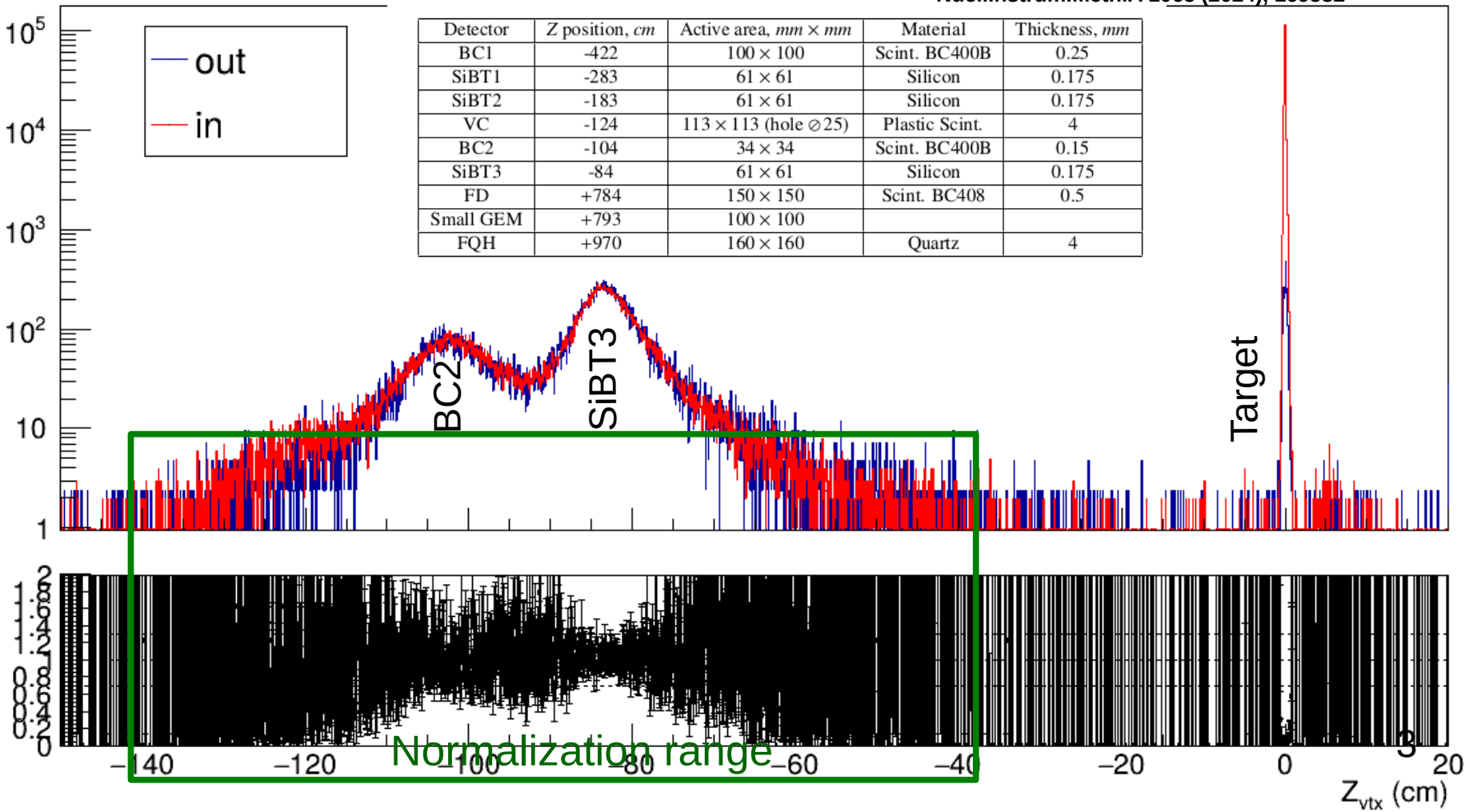
- Adjacent good runs (8066 and 8067)
- CCT2 trigger
- Number of tracks for vertex reconstruction > 1
- Vertex X, Y and Z within 3 sigma for the run (sigma calculated for vertices within - 1 < Z_{vtx} < 1 cm)
- Pileup cut

Vertex Z

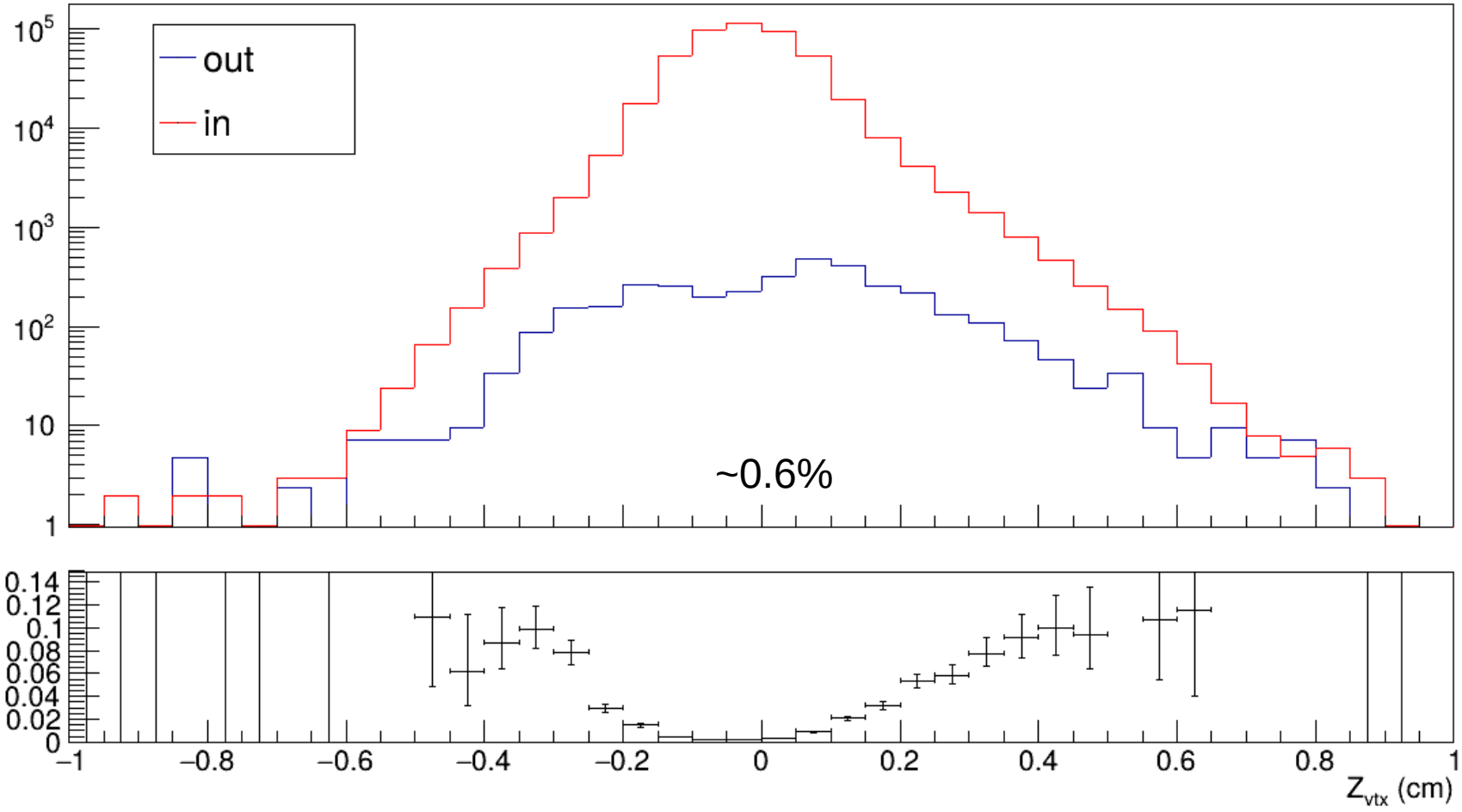
Table 1. Beam line detectors.

Detector	Z position, *cm*	Active area, *mm* × *mm*	Material	Thickness, *mm*
BC1	-422	100 × 100	Scint. BC400B	0.25
SiBT1	-283	61 × 61	Silicon	0.175
SiBT2	-183	61 × 61	Silicon	0.175
VC	-124	113 × 113 (hole ⊘25)	Plastic Scint.	4
BC2	-104	34 × 34	Scint. BC400B	0.15
SiBT3	-84	61 × 61	Silicon	0.175
FD	+784	150 × 150	Scint. BC408	0.5
Small GEM	+793	100 × 100		
FQH	+970	160 × 160	Quartz	4

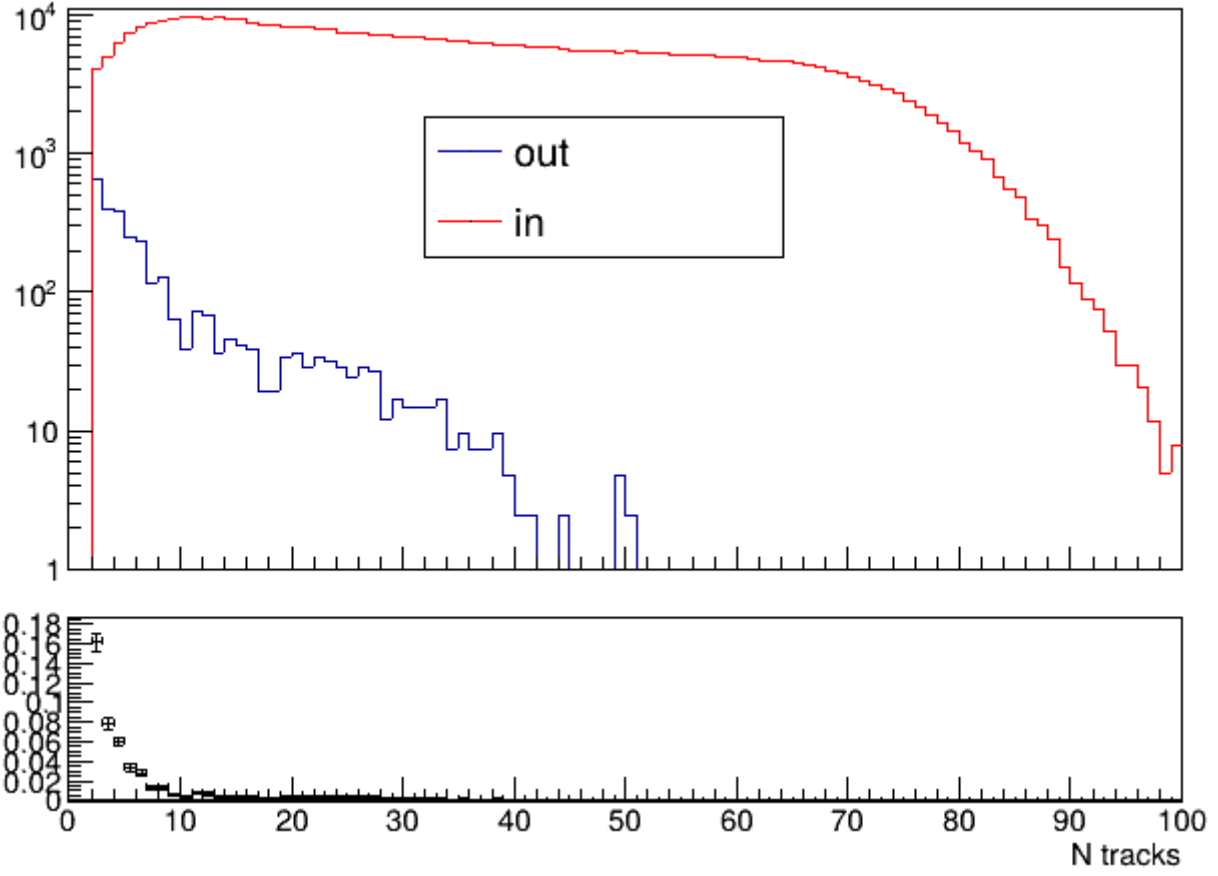
Nucl.Instrum.Meth.A 1065 (2024), 169532



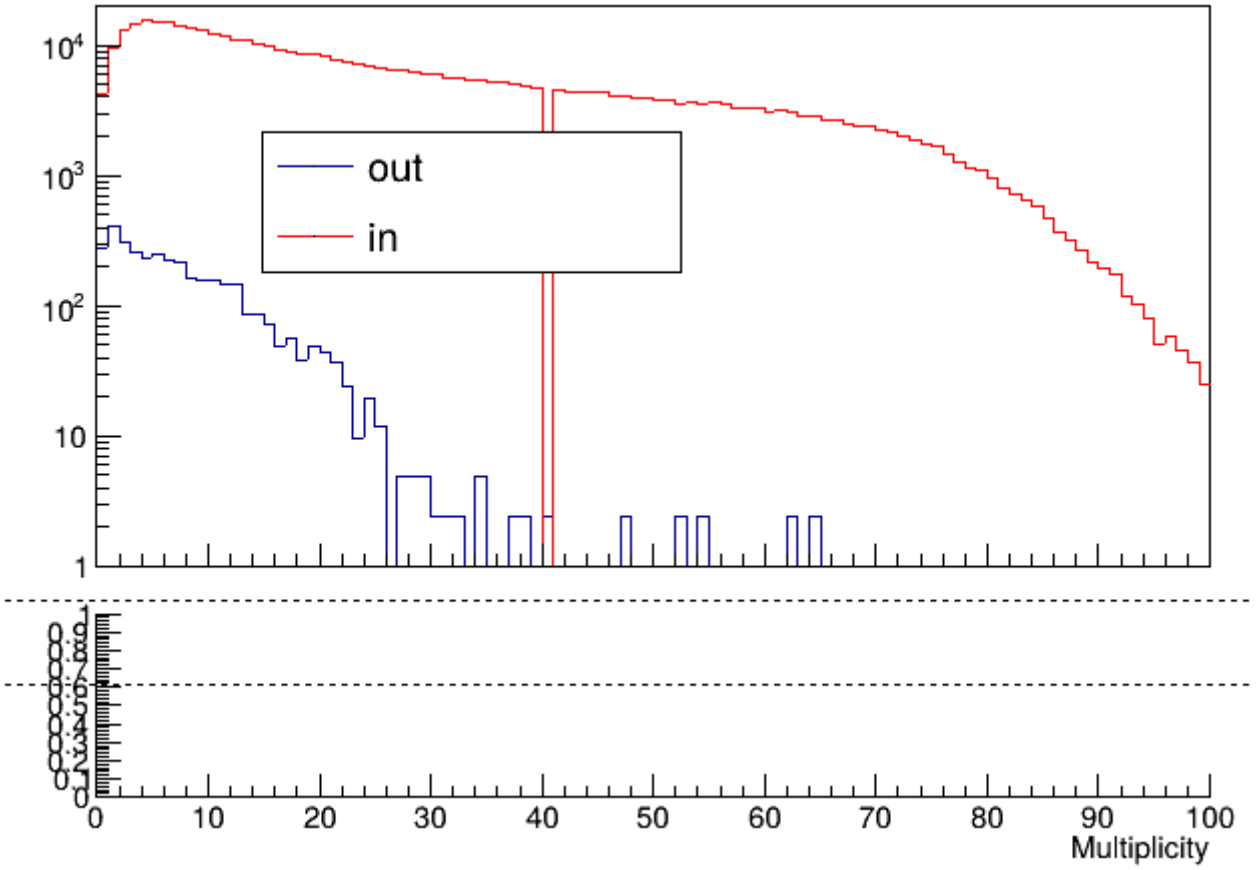
Vertex Z (at target)



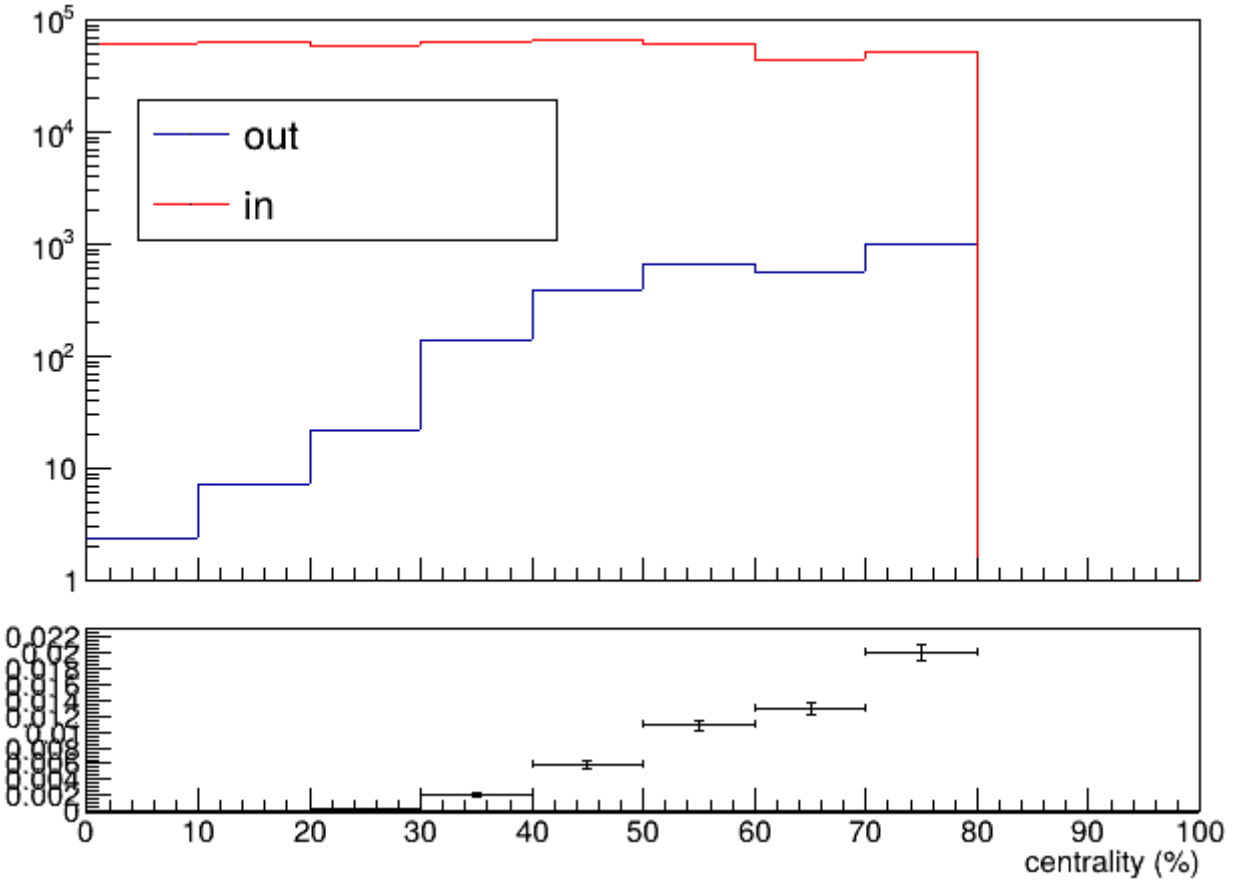
Vertex multiplicity



Scaled multiplicity



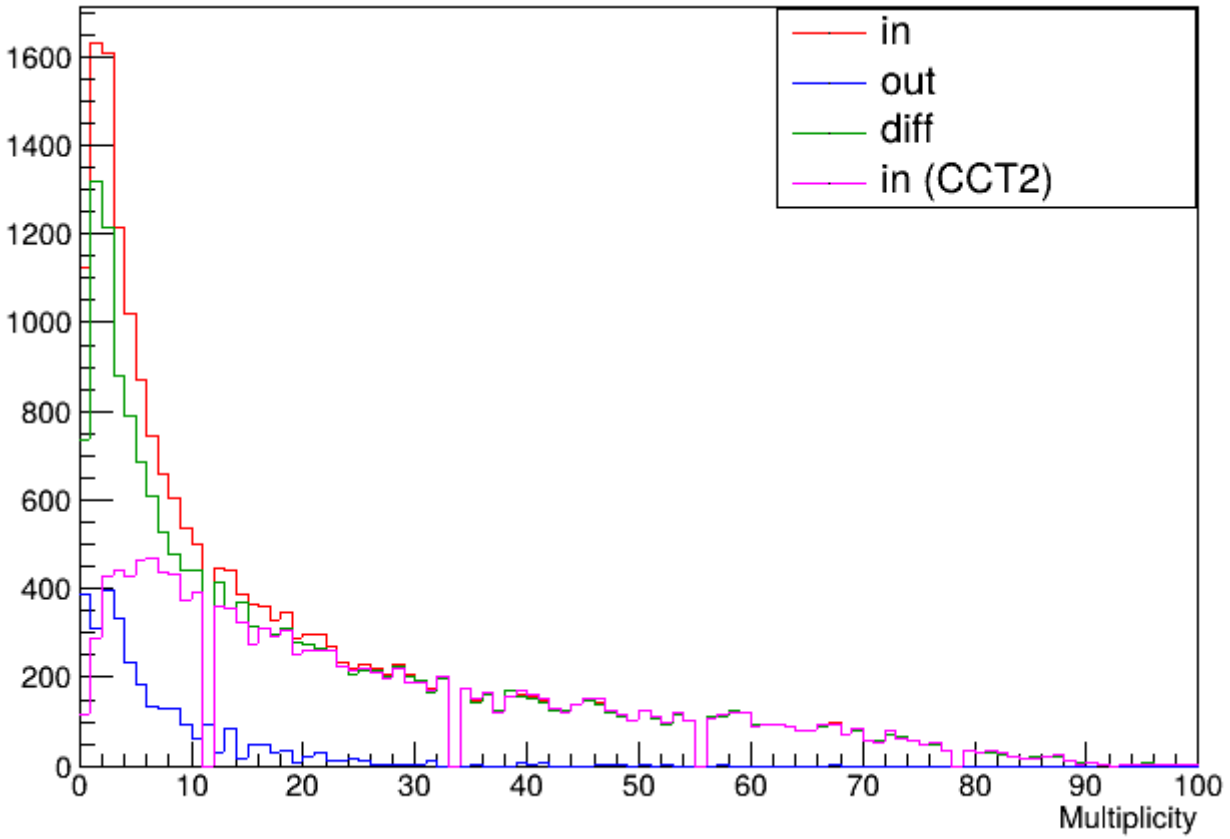
Centrality



Trying to asess full integral

- Runs with BT trigger (8281 – target in, 8282-8283 – target out)
- Same event selection, besides CCT2 trigger
- Same normalization procedure
- Plot distribution of centrality estimator for target-in and out events
- Subtract target-out distribution from target-in -> full integral
- Compare to the same distribution with CCT2 trigger requirement

Multiplicity distribution



Multiplicity distribution (log)

