
Proton beam gas update

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BNL

2024.01.30

EICReco production

New production by Sakib Rahman for proton beam gas events:

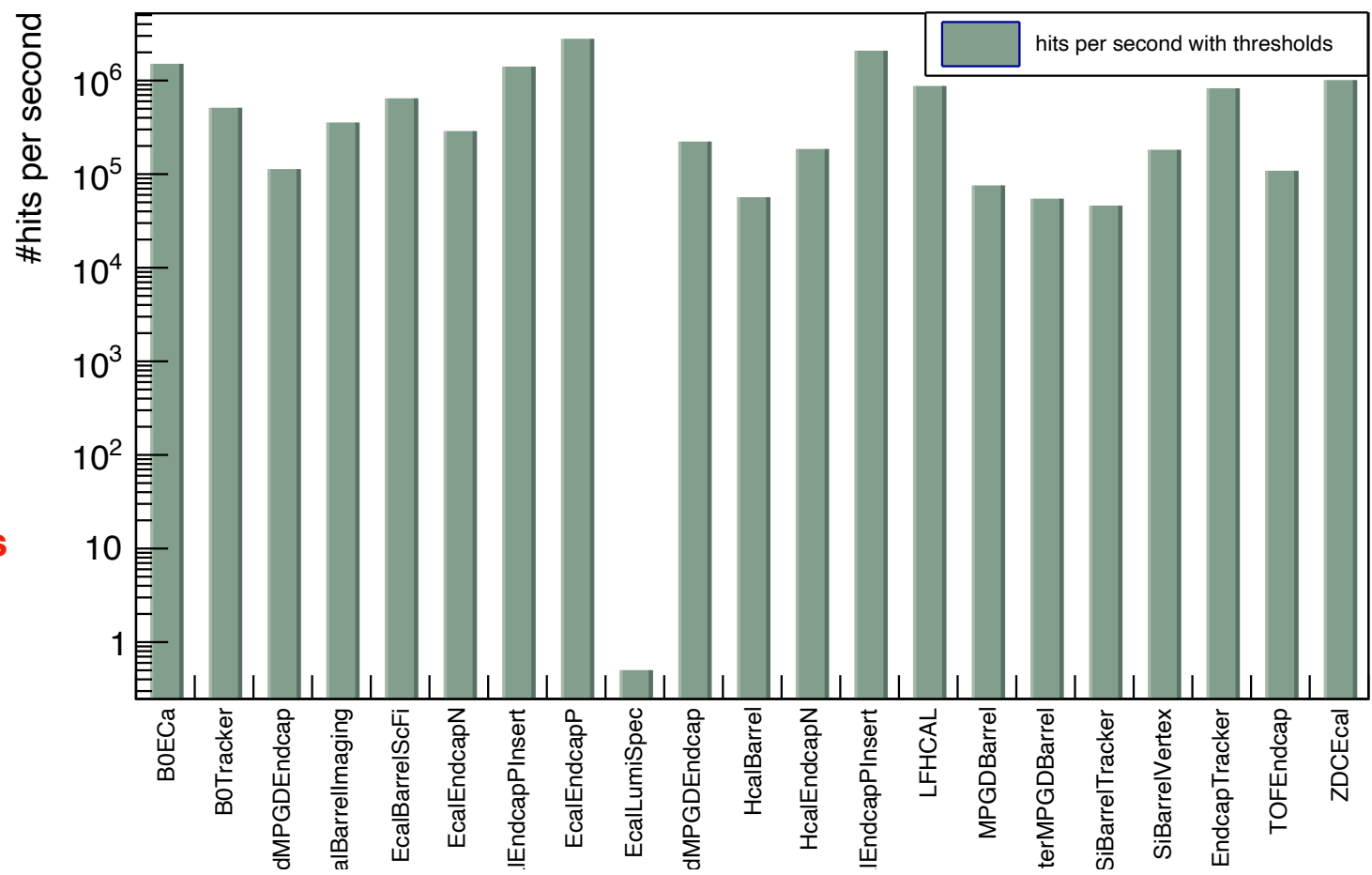
S3/eictest/EPIC/RECO/23.12.0/epic_craterlake/BACKGROUNDS/BEAMGAS/proton/pythia8.306-1.0/

The production we used for DIS events:

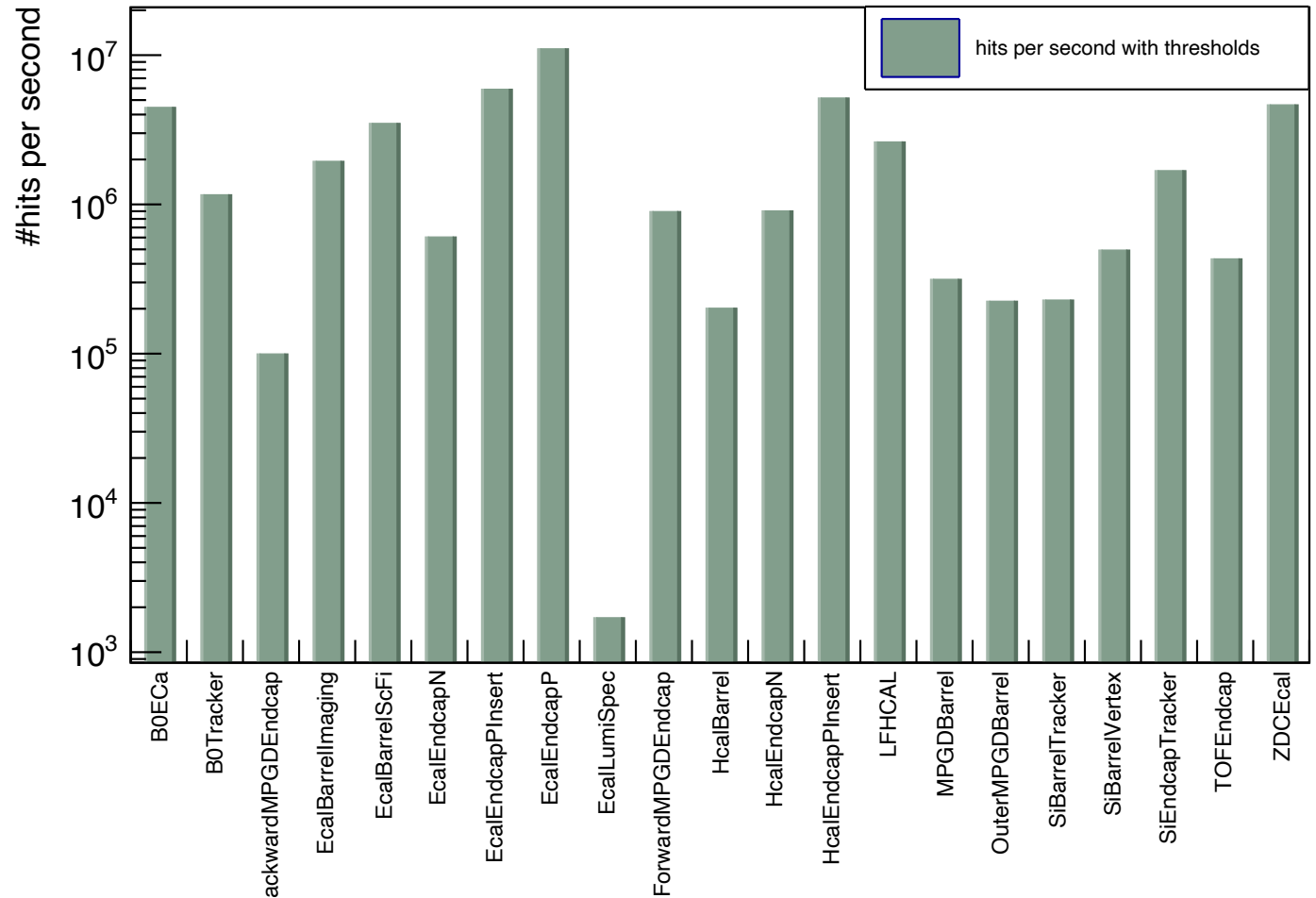
S3/eictest/EPIC/RECO/23.12.0/epic_craterlake/SIDIS/pythia6-eic/1.0.0/18x275/q2_0to1/

Hits rate in each sub detector

Proton beam gas
275 GeV

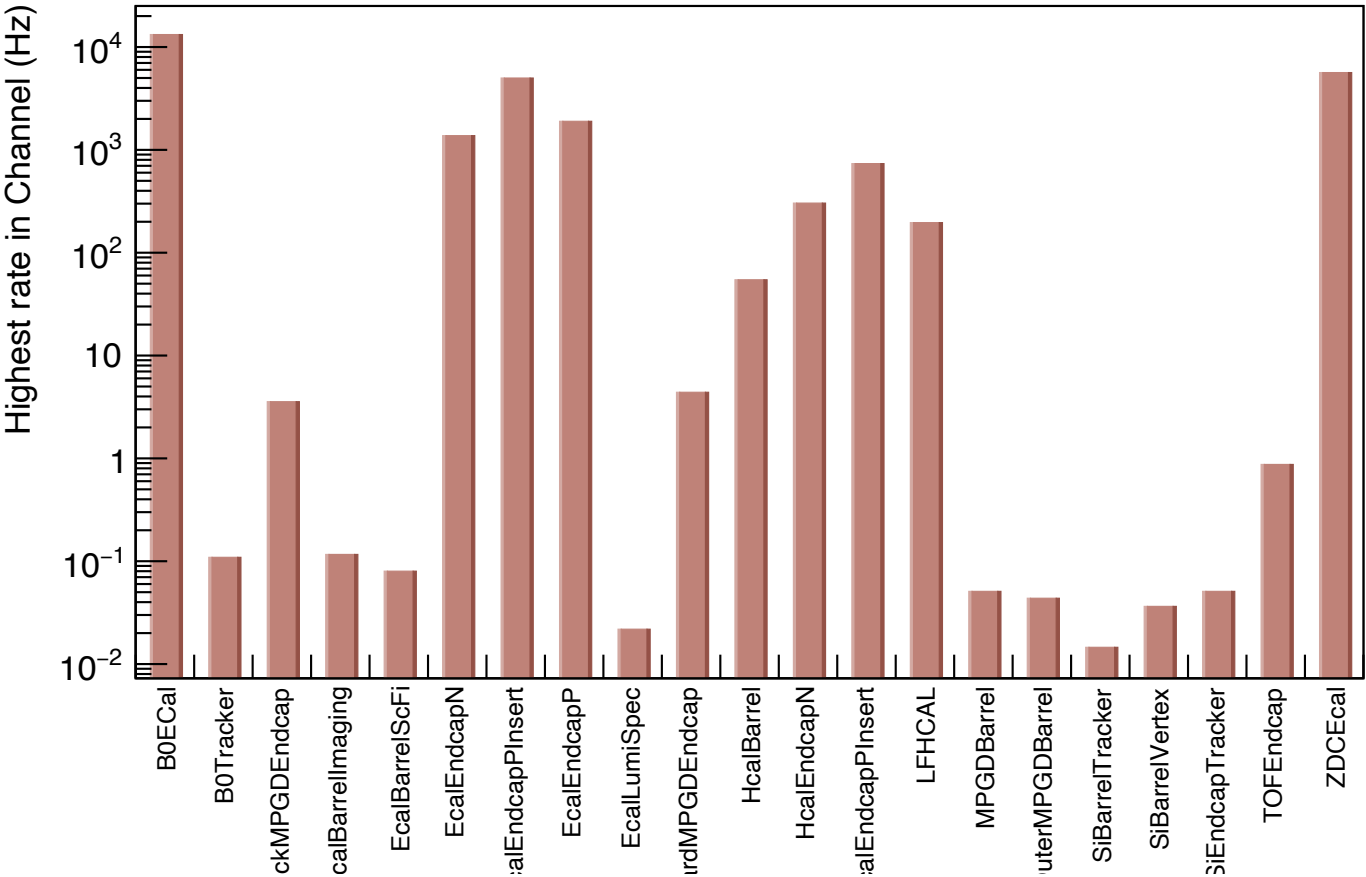


DIS
0 < Q² < 1
18x275 GeV

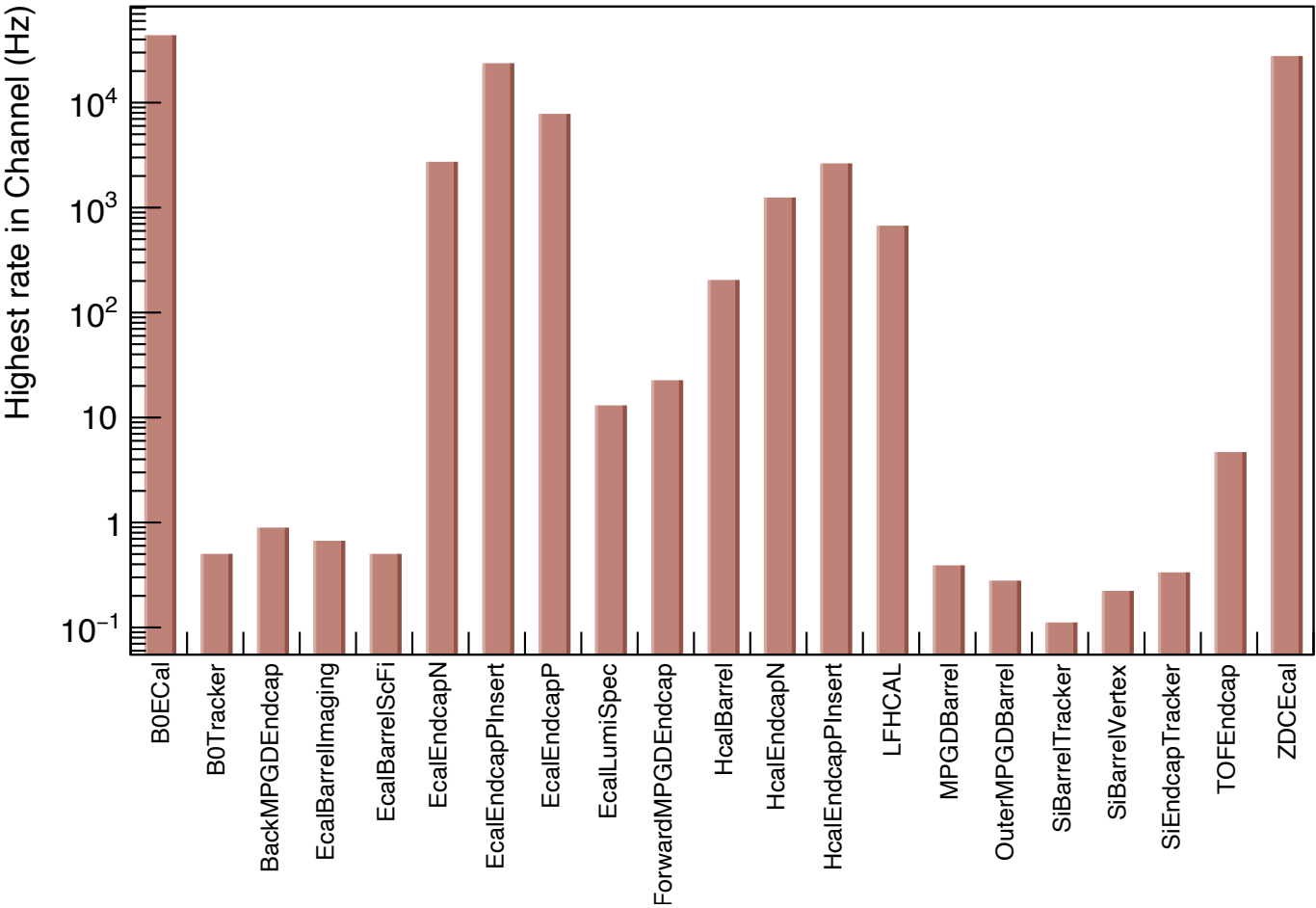


Highest rate in Channel for each sub detector

Proton beam gas
275 GeV



DIS
0 < Q² < 1
18x275 GeV



Highest rate in Channel for each sub detector

Proton beam gas
275 GeV

Sub Detector	Maximum Rate in Channel (Hz)	Cell ID
B0ECal	13227.3	217513
B0Tracker	0.10918	124411415737008534
BackwardMPGDEndcap	3.55925	18324583925227259464
EcalBarrelImaging	0.116458	3377671628147557
EcalBarrelScFi	0.080065	18201297911282682985
EcalEndcapN	1375.25	36827495
EcalEndcapPInsert	4998	18446744052276691050
EcalEndcapP	1896.91	18443366356851130470
EcalLumiSpec	0.0218359	4522434
ForwardMPGDEndcap	4.3963	18330776417664566866
HcalBarrel	54.5534	190319
HcalEndcapN	303.781	281466411975281
HcalEndcapPInsert	735.63	18446744052235043187
LFHCAL	196.188	450420
MPGDBarrel	0.0509504	47780420263346493
OuterMPGDBarrel	0.0436718	18338447117602844736
SiBarrelTracker	0.0145573	18270908421865795900
SiBarrelVertex	0.0363932	17220357720457597215
SiEndcapTracker	0.0509504	15838878848293806662
TOFEndcap	0.873436	18443647692087230842
ZDCEcal	5647.01	120996

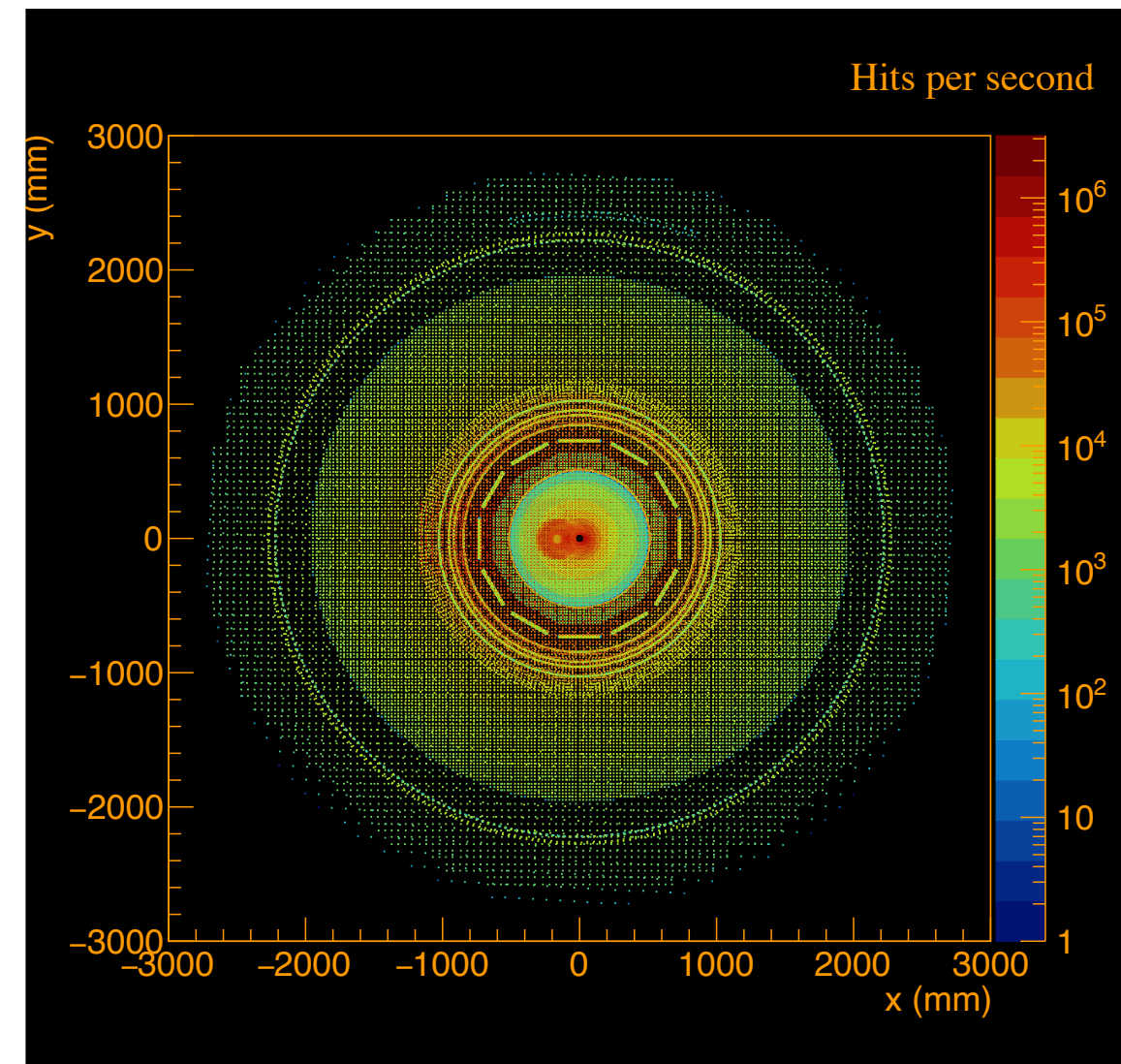
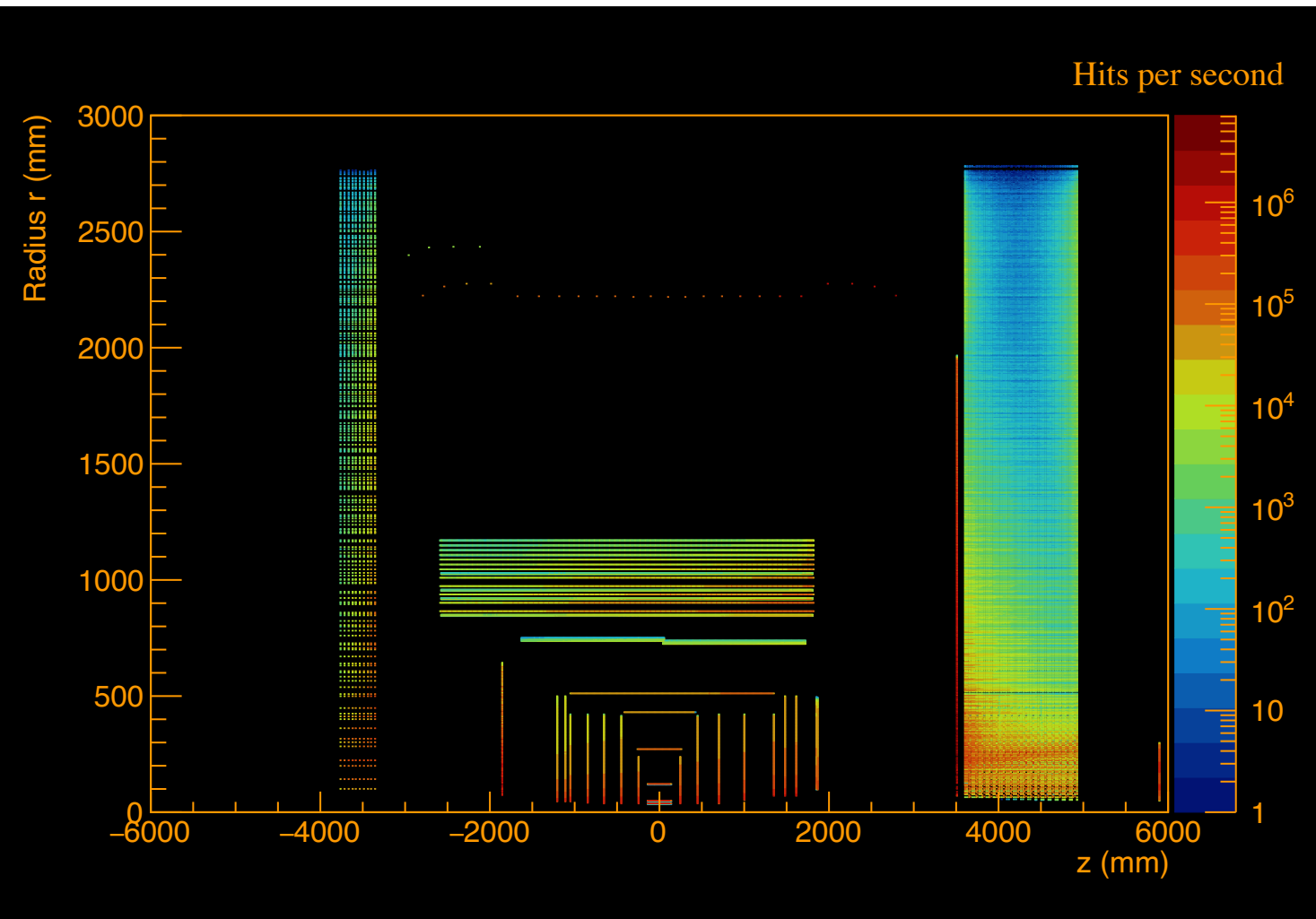
Highest rate in Channel for each sub detector

DIS
 $0 < Q^2 < 1$
18x275 GeV

Sub Detector	Maximum Rate in Channel (Hz)	Cell ID
B0Ecal	43407	217513
B0Tracker	0.496542	113997391354532246
BackwardMPGDEndcap	0.882741	18324865387319116360
EcalBarrelImaging	0.662056	18444210882349437029
EcalBarrelScFi	0.496542	18444210882349437029
EcalEndcapN	2699.26	32645479
EcalEndcapPInsert	23481	18446744052276691050
EcalEndcapP	7713.61	18443366356851130470
EcalLumiSpec	12.9101	5112002
ForwardMPGDEndcap	22.3996	18331057884051343954
HcalBarrel	201.982	190319
HcalEndcapN	1233.24	281466411975281
HcalEndcapPInsert	2606.18	18446744052235043187
LFHCAL	664.263	498804
MPGDBarrel	0.386199	18302699207150018877
OuterMPGDBarrel	0.275857	22095459271110720
SiBarrelTracker	0.110343	18239984592910139707
SiBarrelVertex	0.220685	18017776286529220895
SiEndcapTracker	0.331028	16030281639183529039
TOFEndcap	4.63439	18443647966965137786
ZDCEcal	27436.6	120996

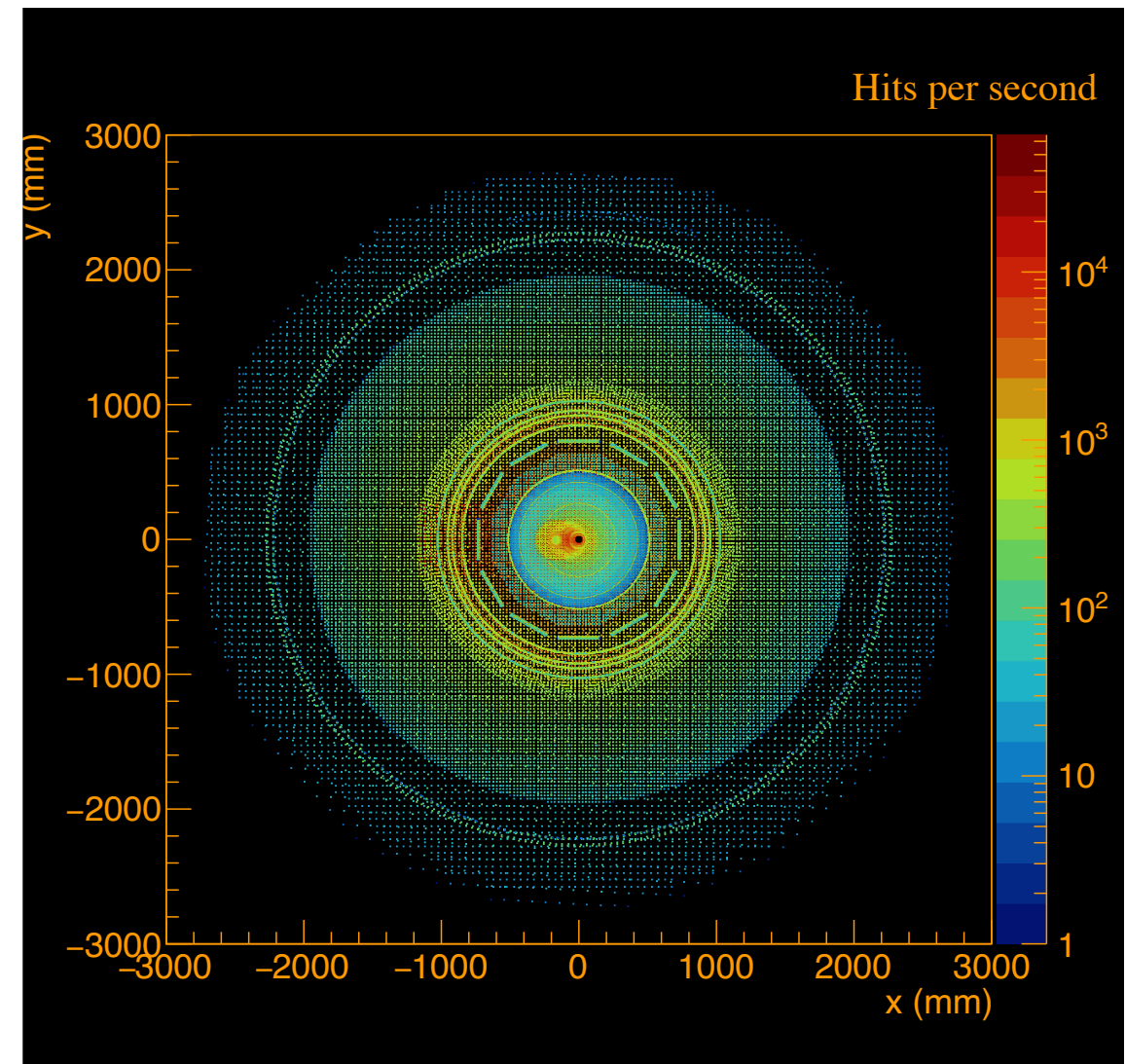
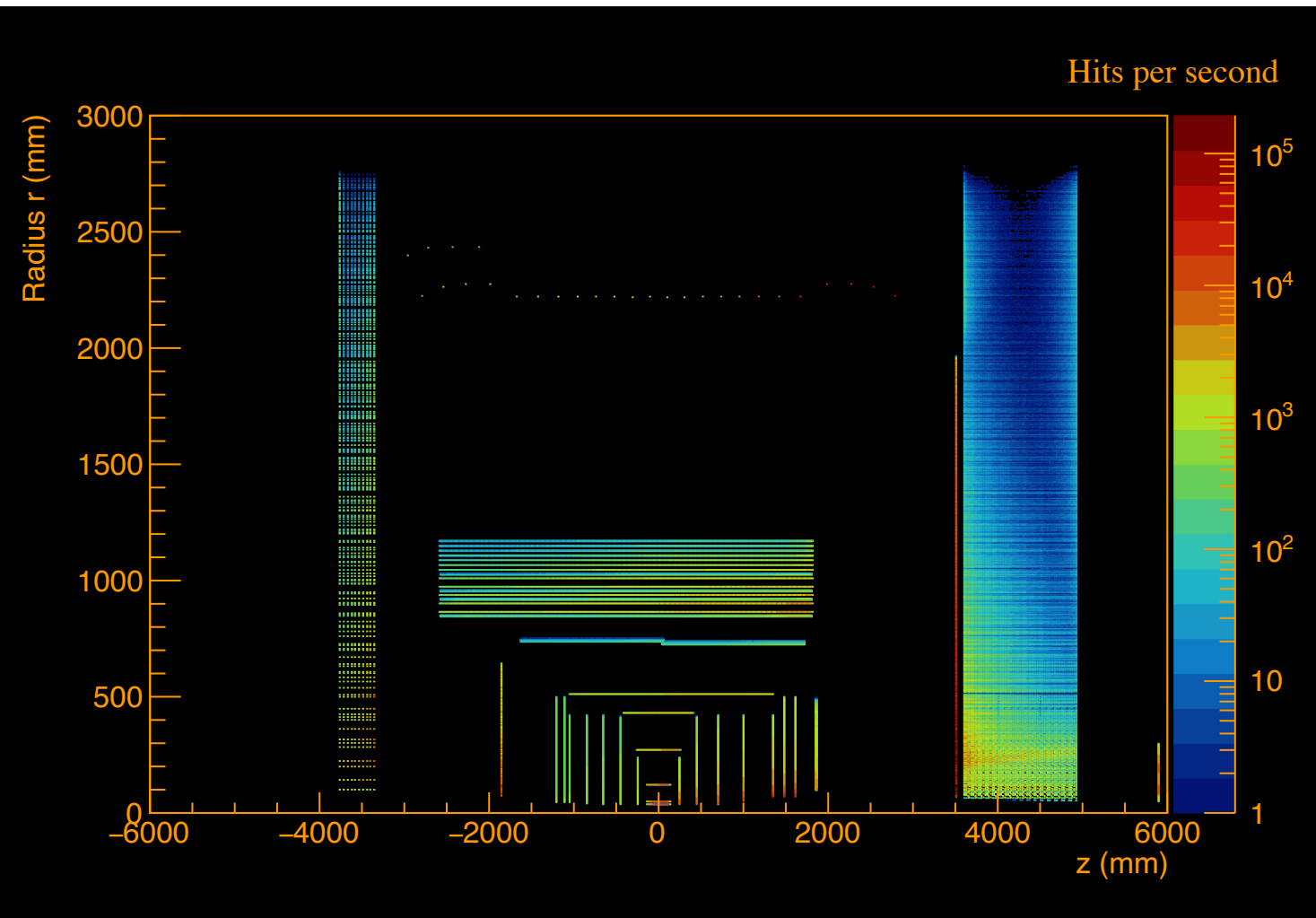
Hits Distribution for all sub detectors

Proton beam gas
275 GeV



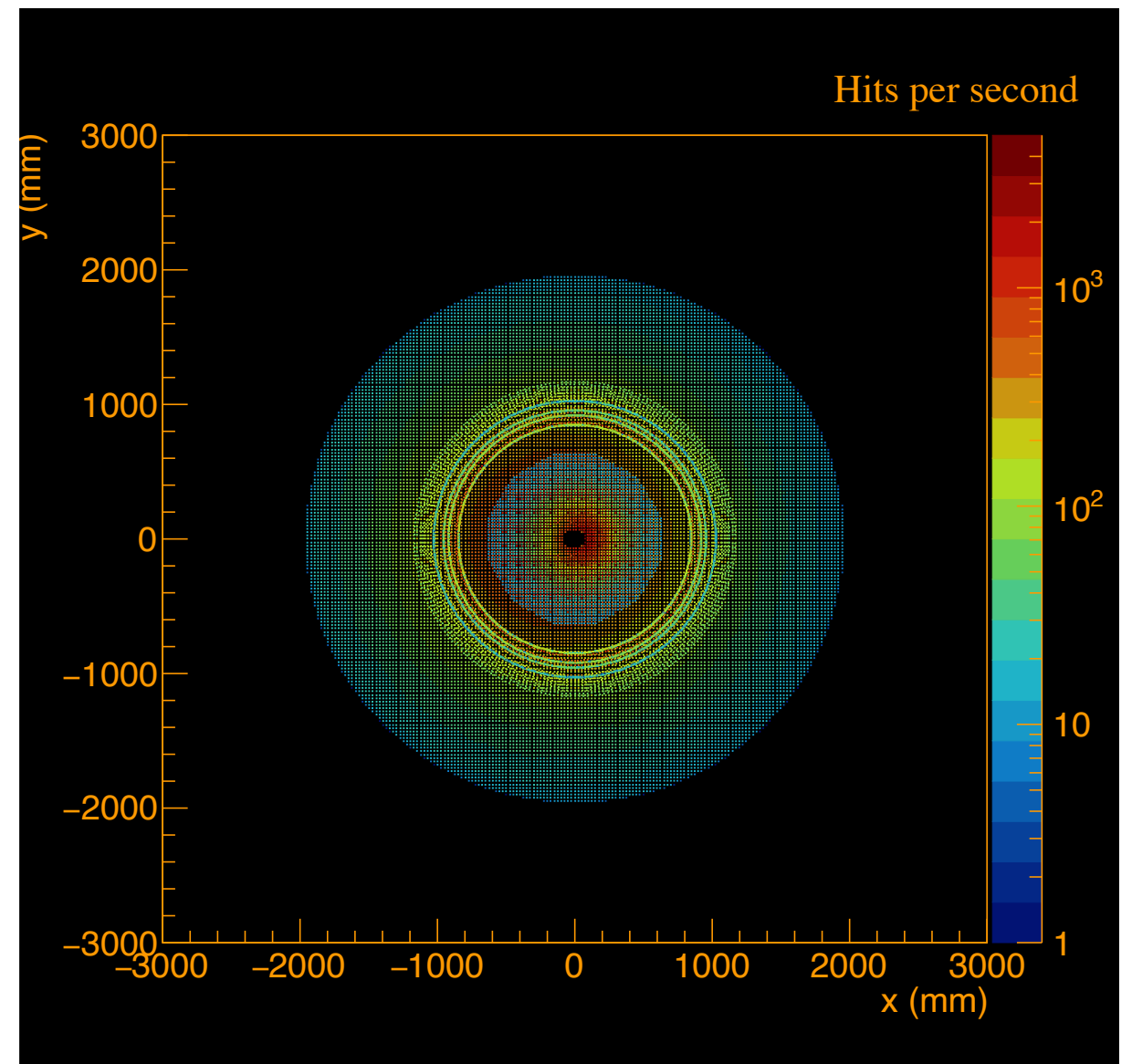
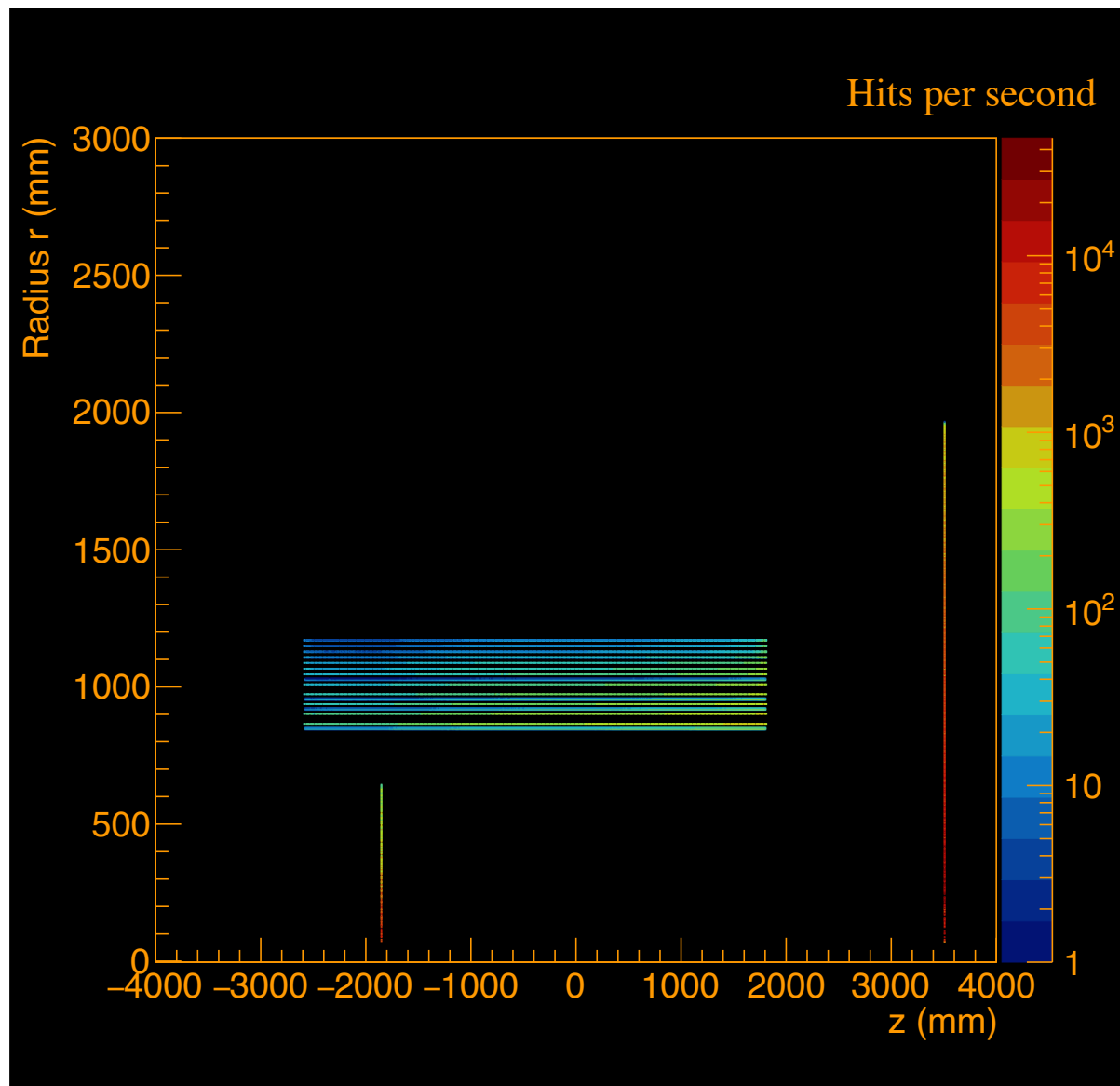
Hits Distribution for all sub detectors

DIS
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18x275 GeV



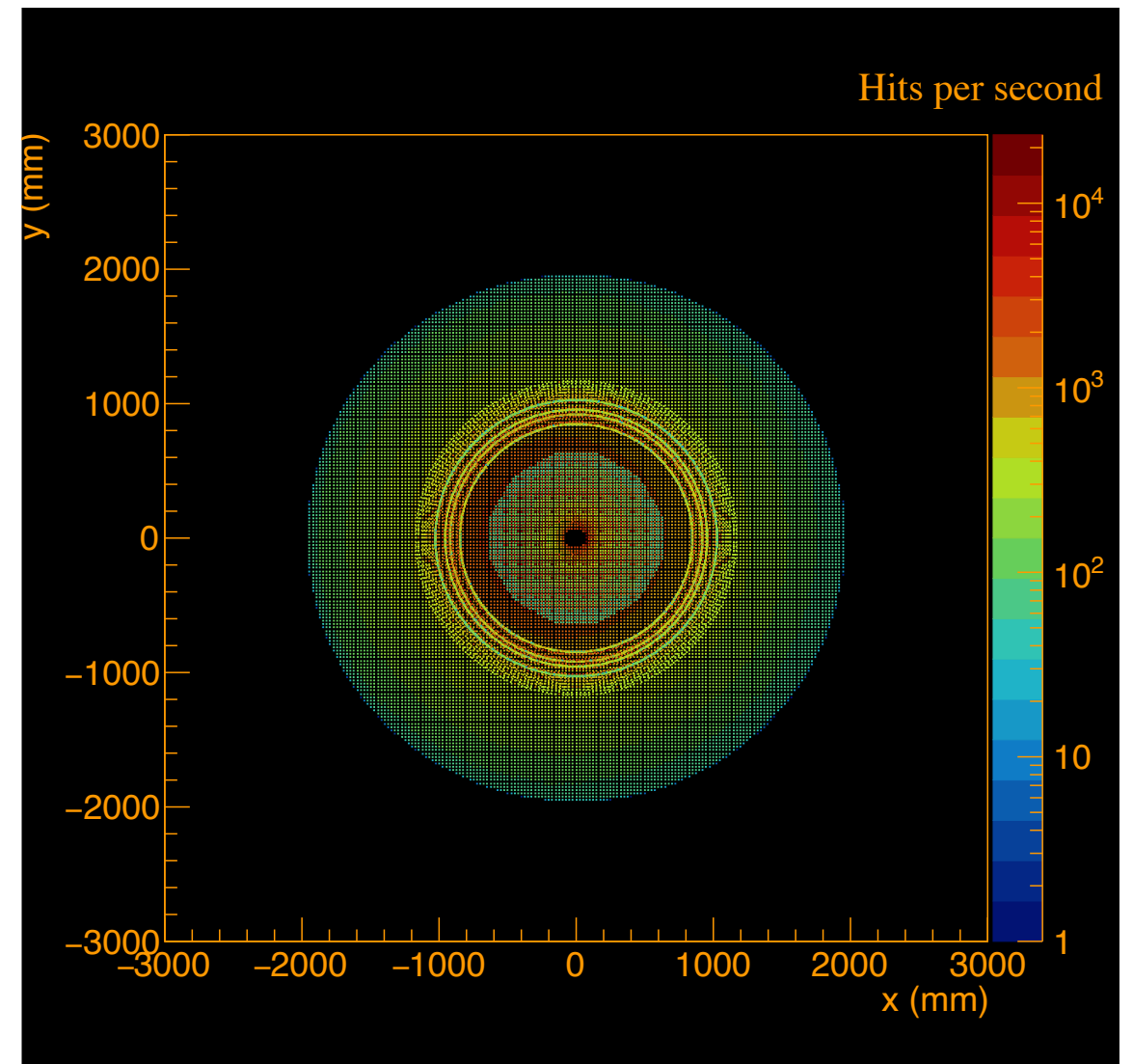
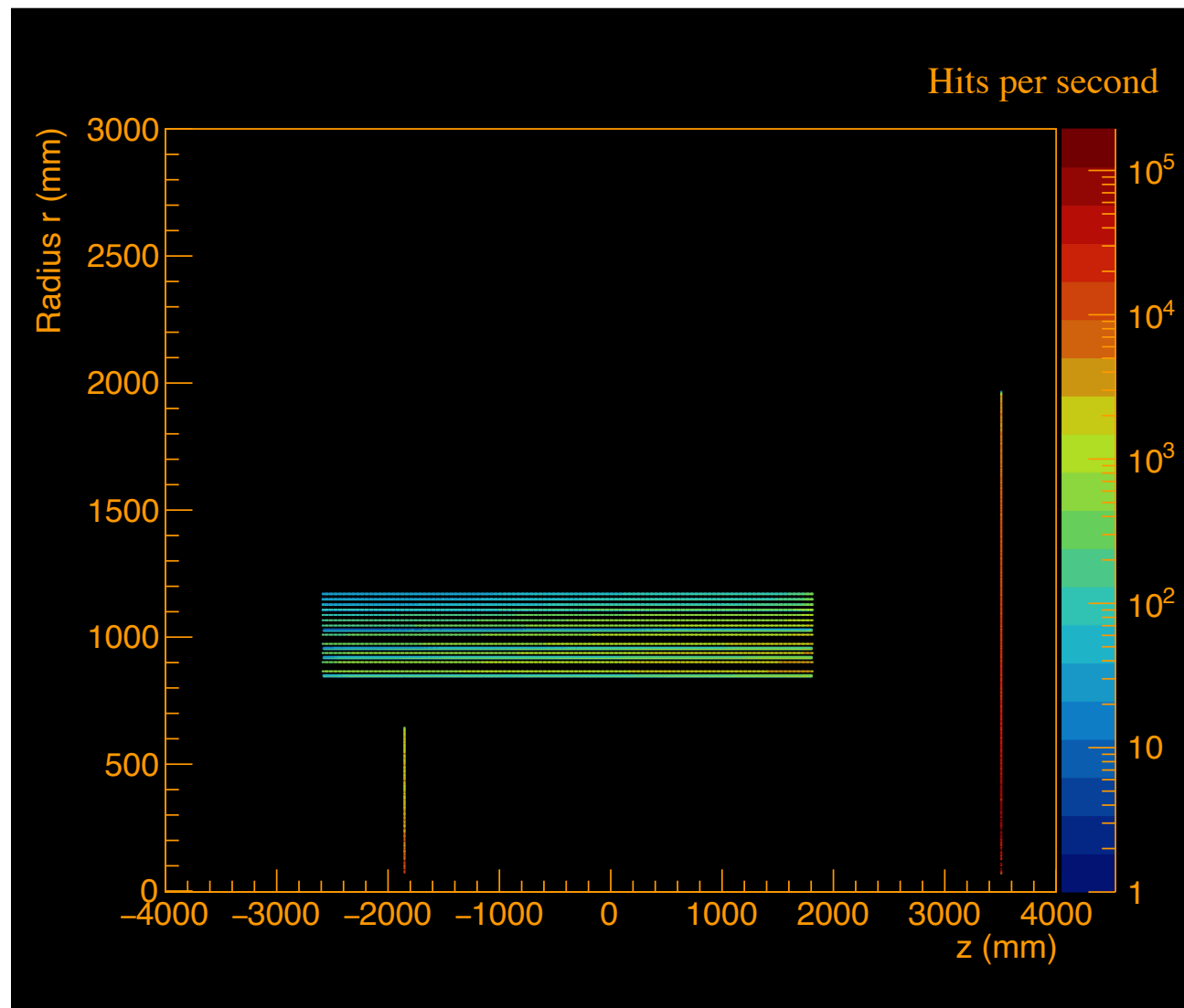
Electromagnetic calorimeters, EcalBarrelSciGlass+EcalEndcapP + EcalEndcapN +EcalEndcapPInsert

Proton beam gas
275 GeV



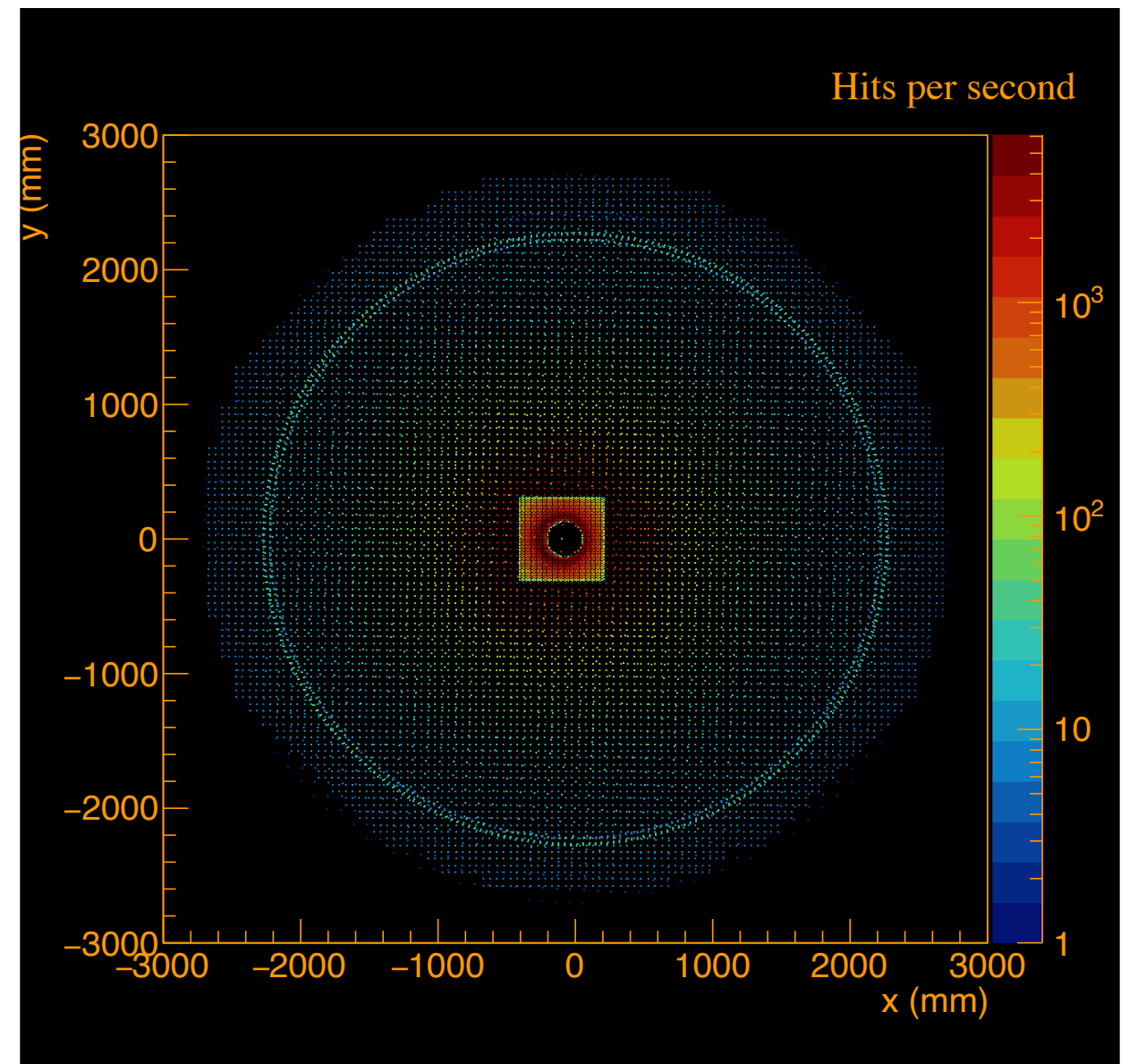
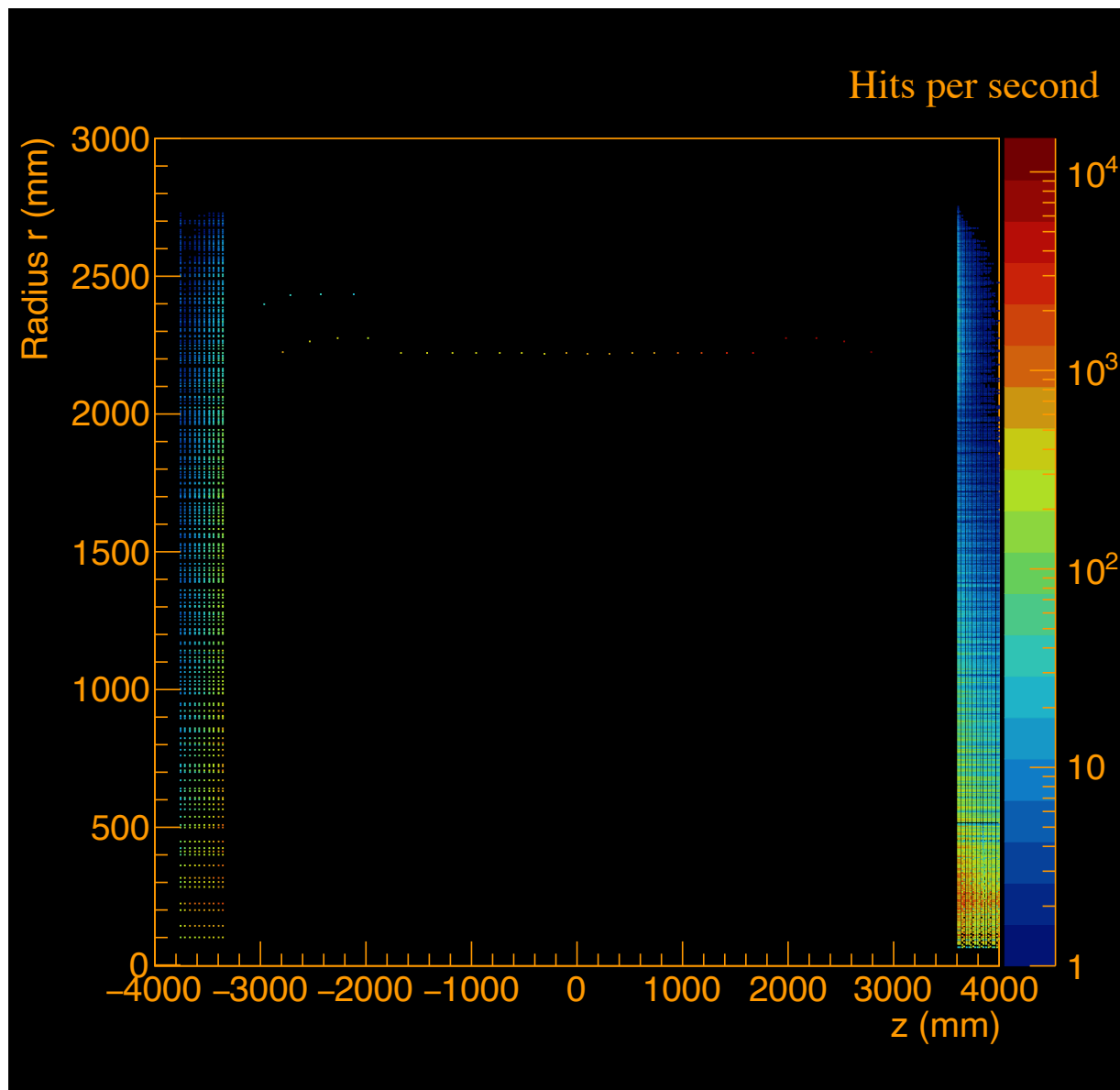
Electromagnetic calorimeters, EcalBarrelSciGlass+EcalEndcapP + EcalEndcapN +EcalEndcapPInsert

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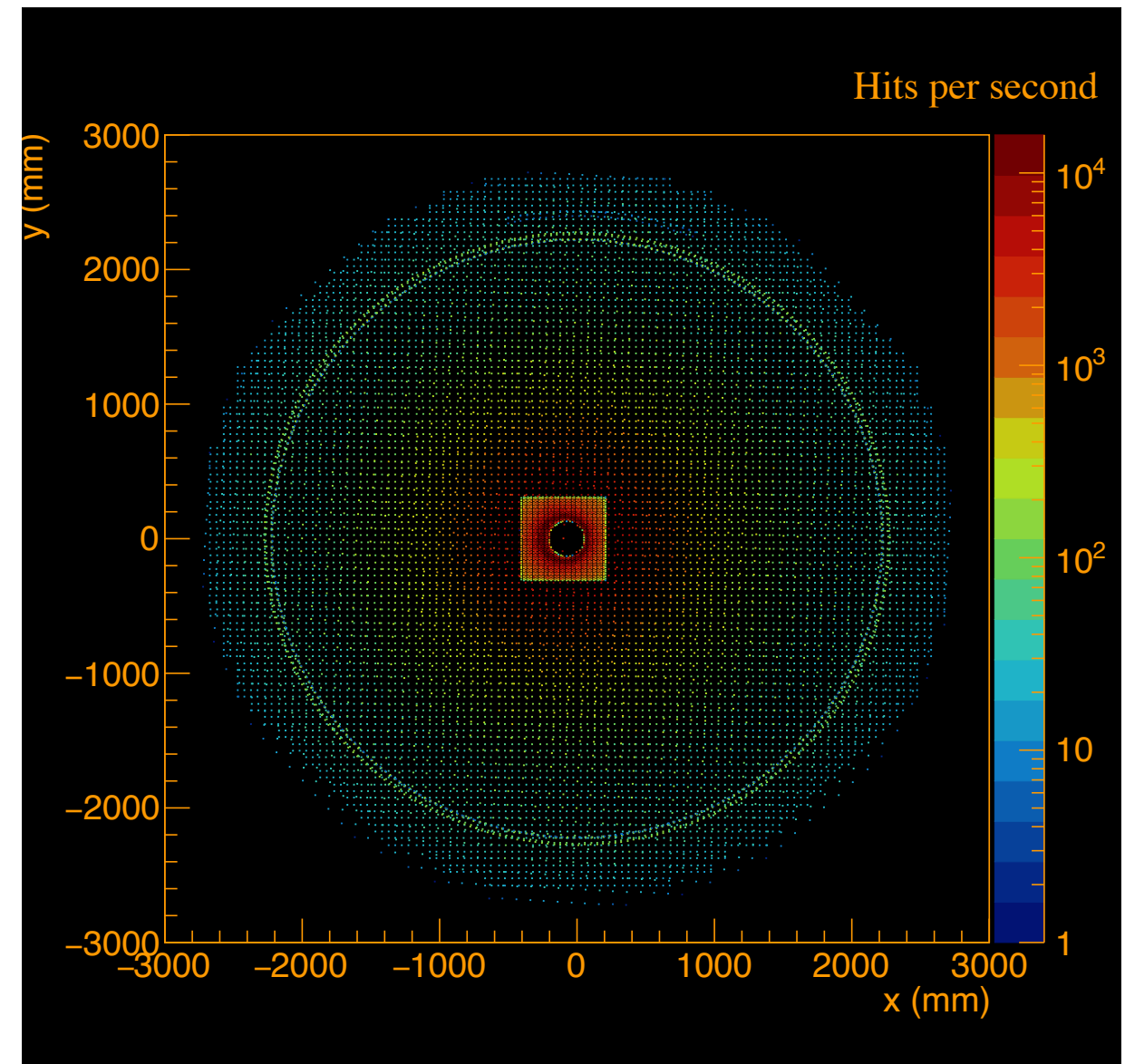
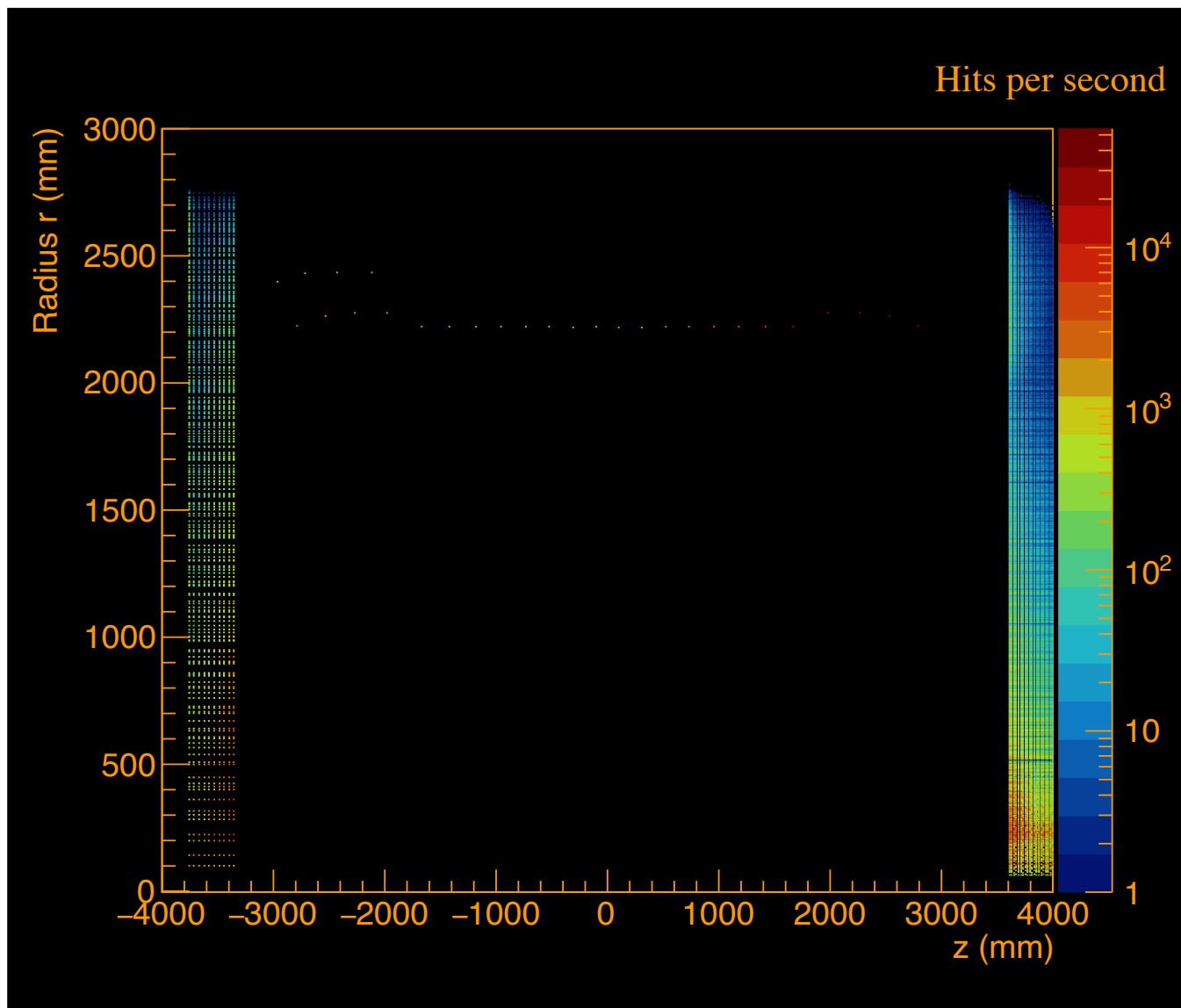
Hadron calorimeters, HcalBarrel + HcalEndcapN + HCalEndcapPInsert + LFHCAL

Proton beam gas
275 GeV



Hadron calorimeters, HcalBarrel + HcalEndcapN + HCalEndcapPInsert + LFHCAL

DIS
 $0 < Q^2 < 1$
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Thanks.
