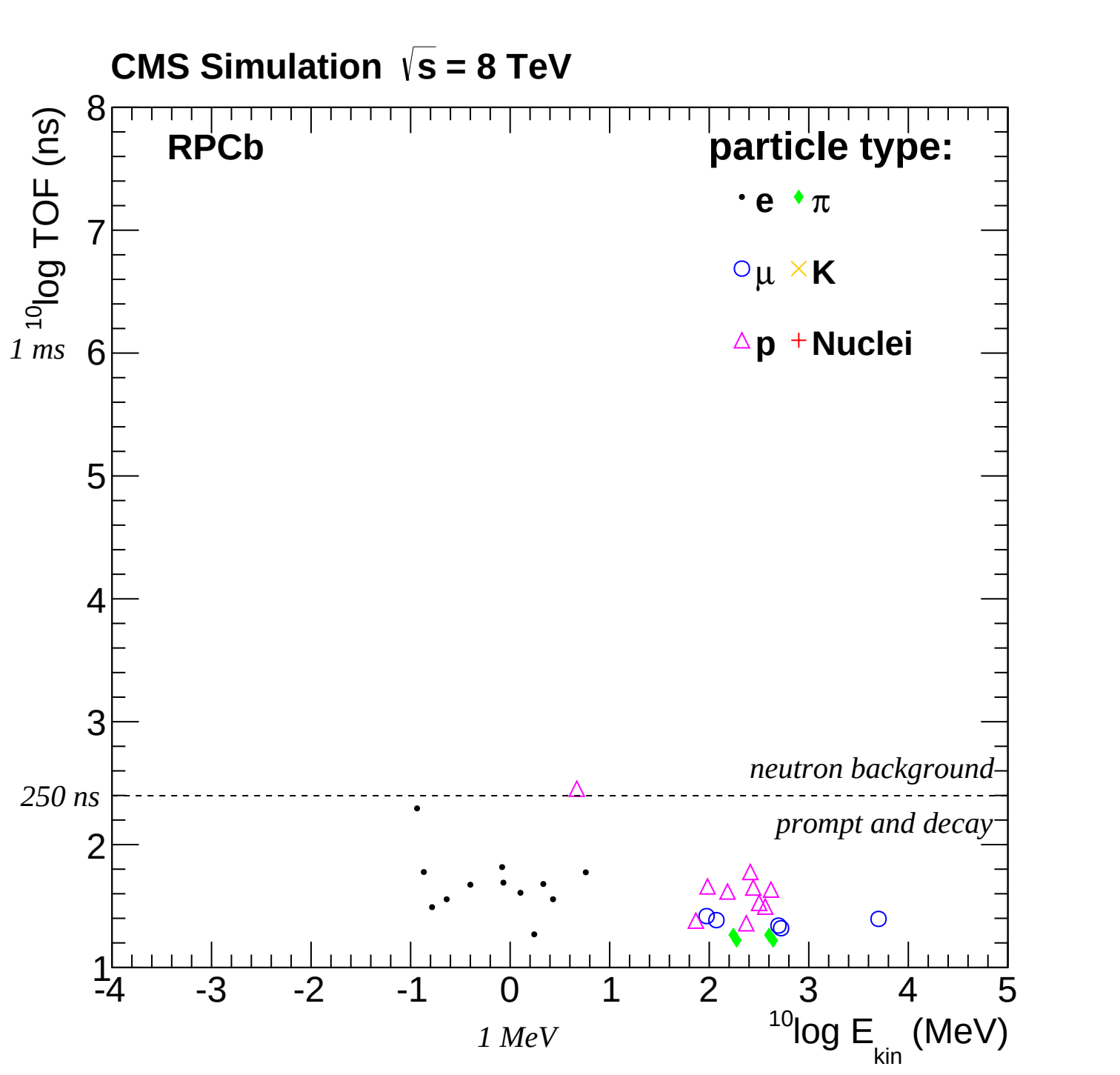
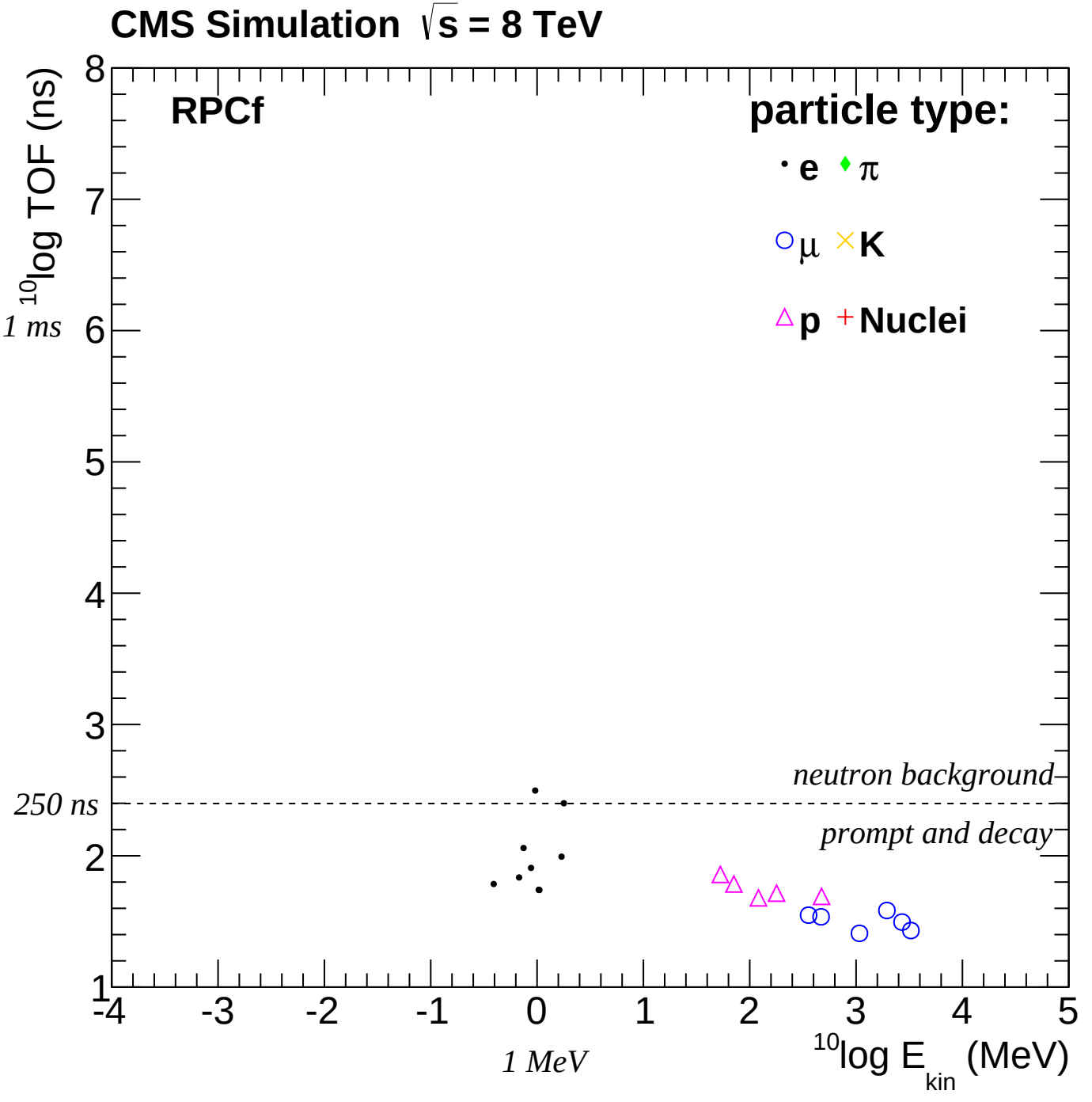
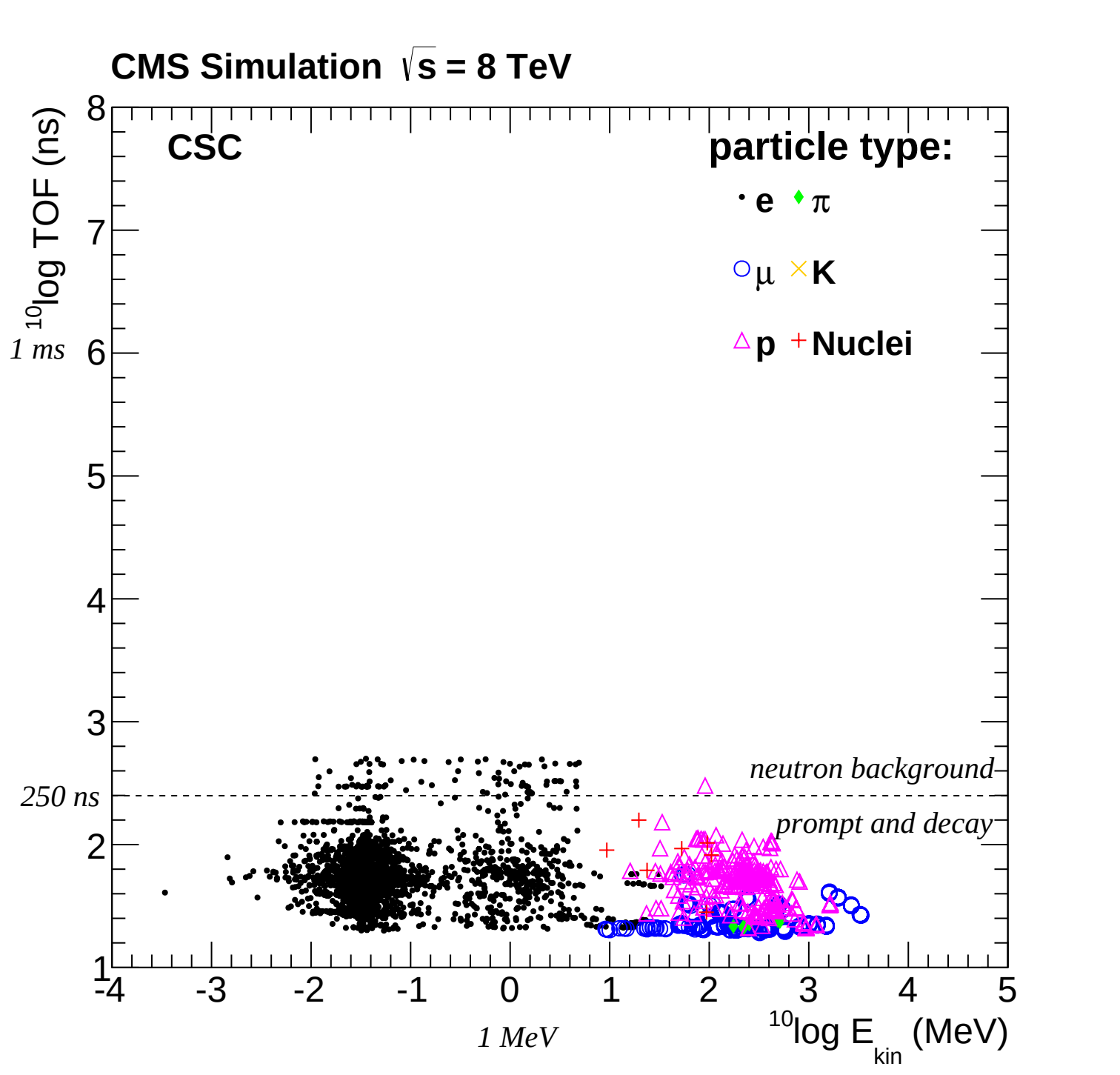
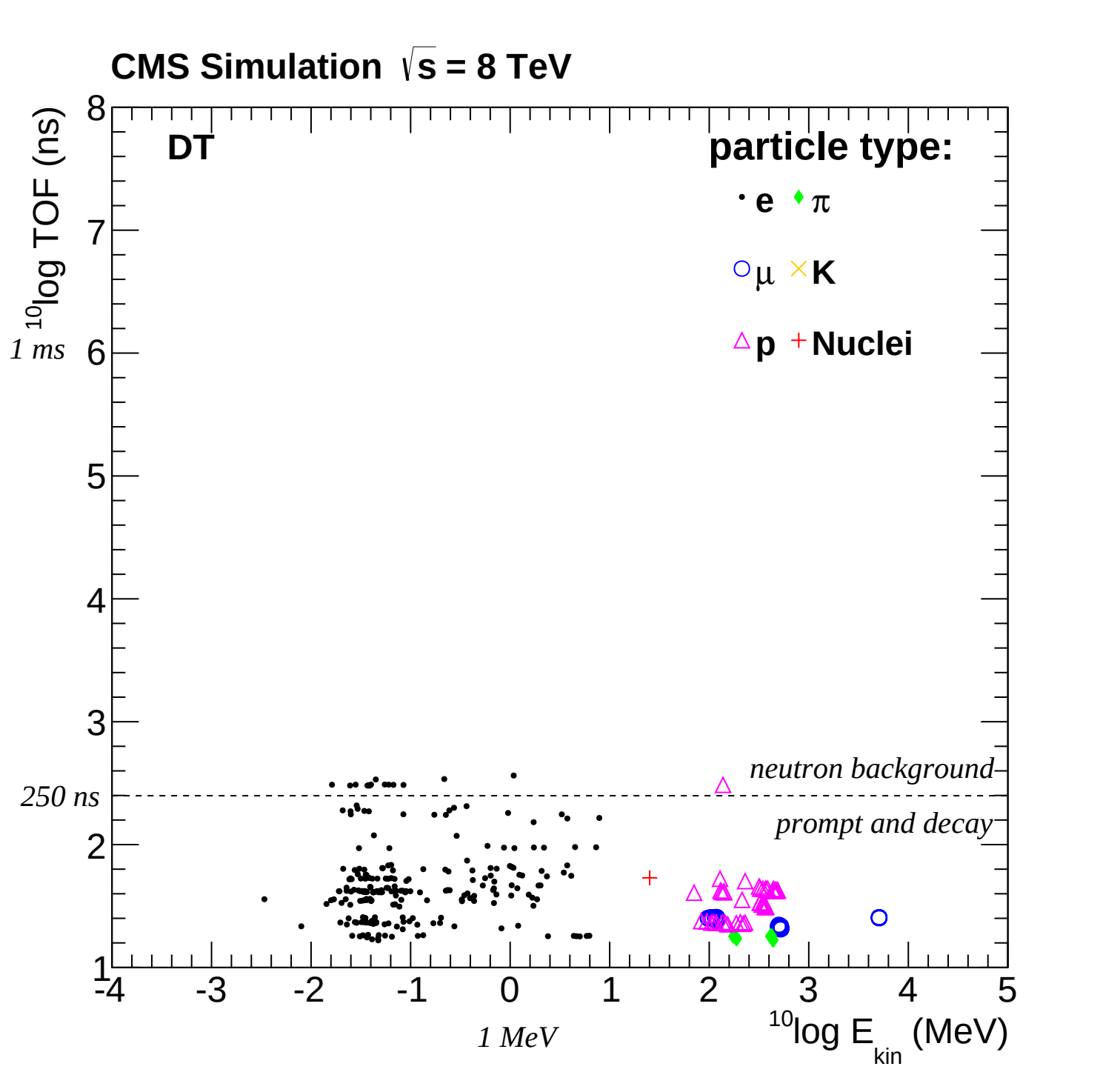
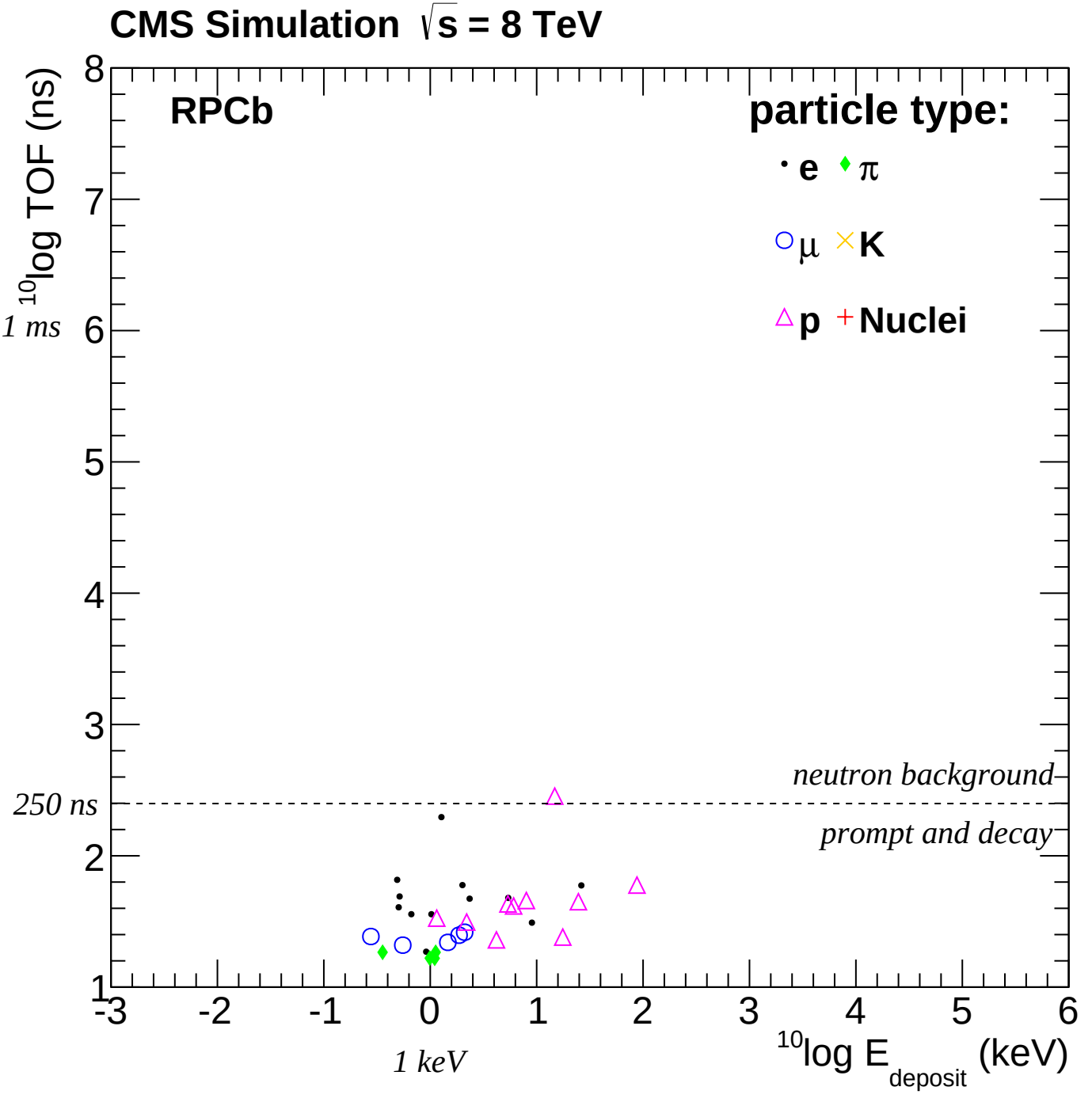
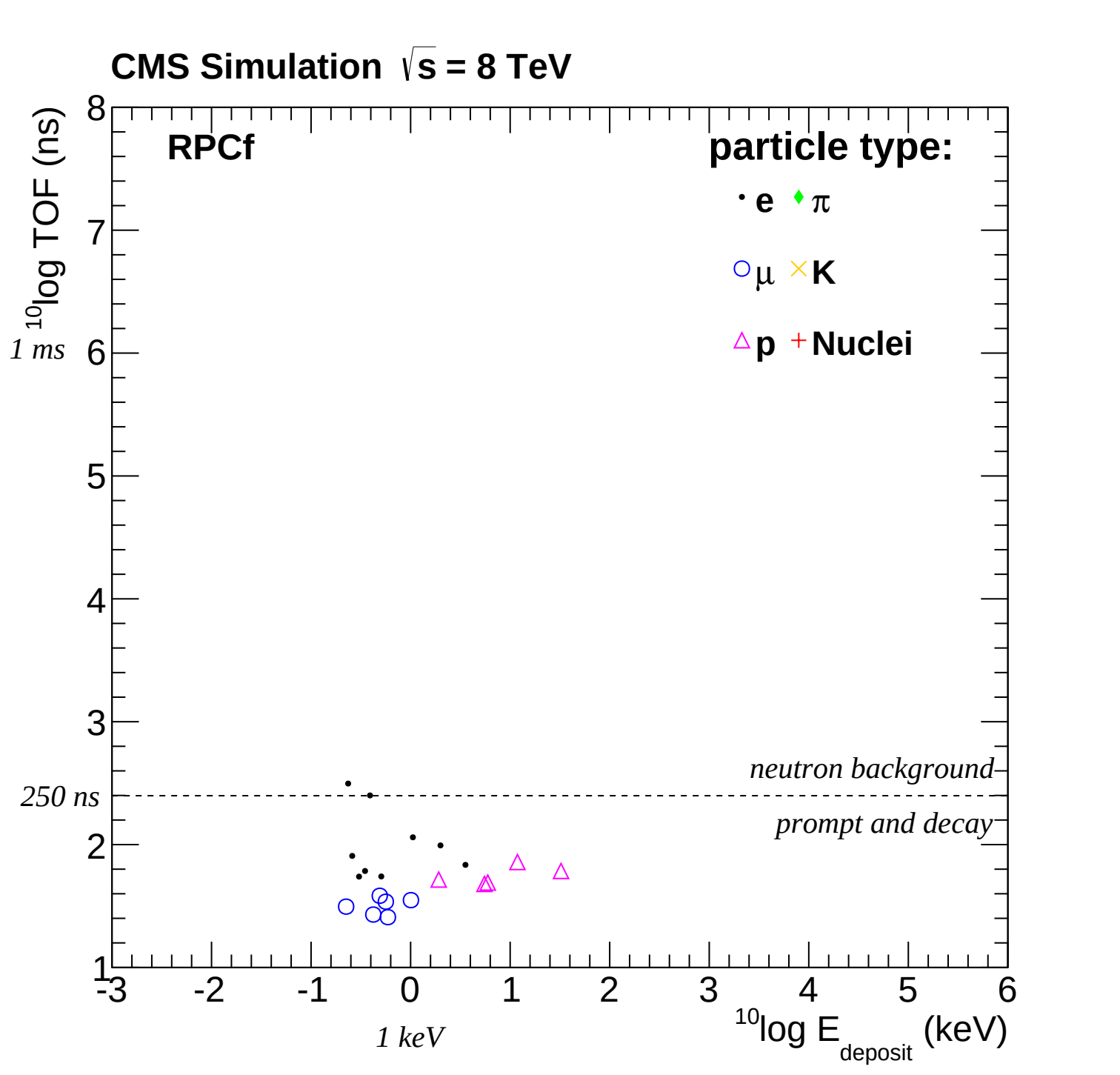

CMS Simulation √s = 8 TeV
RPCb
particle type:
e
π
μ
K
p
Nuclei
$^{10}$log TOF (ns)
1 ms
250 ns
neutron background
prompt and decay
1 MeV
$^{10}$log E$_{kin}$ (MeV)

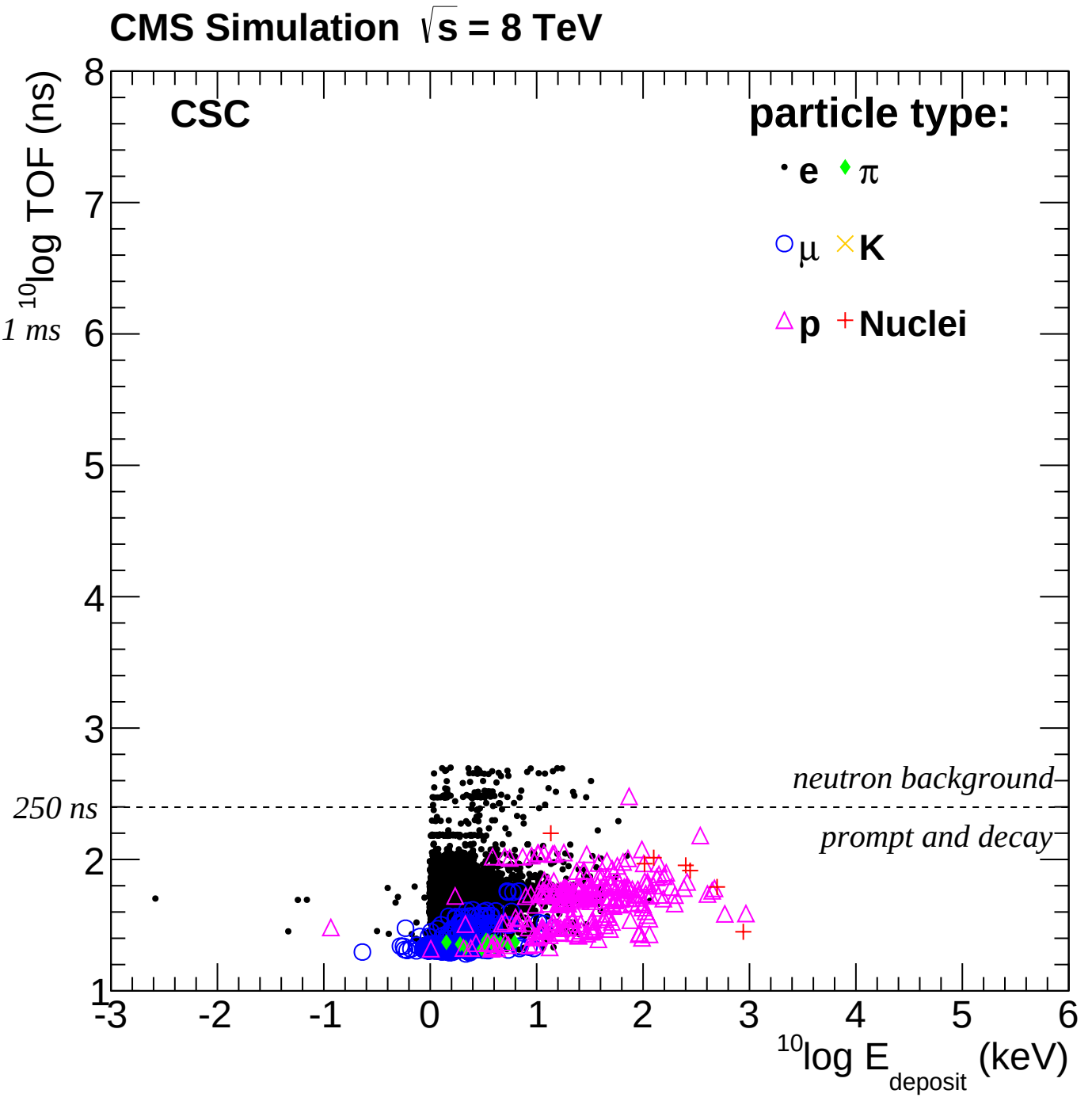

CMS Simulation √s = 8 TeV
RPCf
particle type:
e
π
μ
K
p
Nuclei
$^{10}$log TOF (ns)
1 ms
250 ns
neutron background
prompt and decay
1 MeV
$^{10}$log E$_{kin}$ (MeV)
8
7
6
5
4
3
2
1
-4
-3
-2
-1
0
1
2
3
4
5

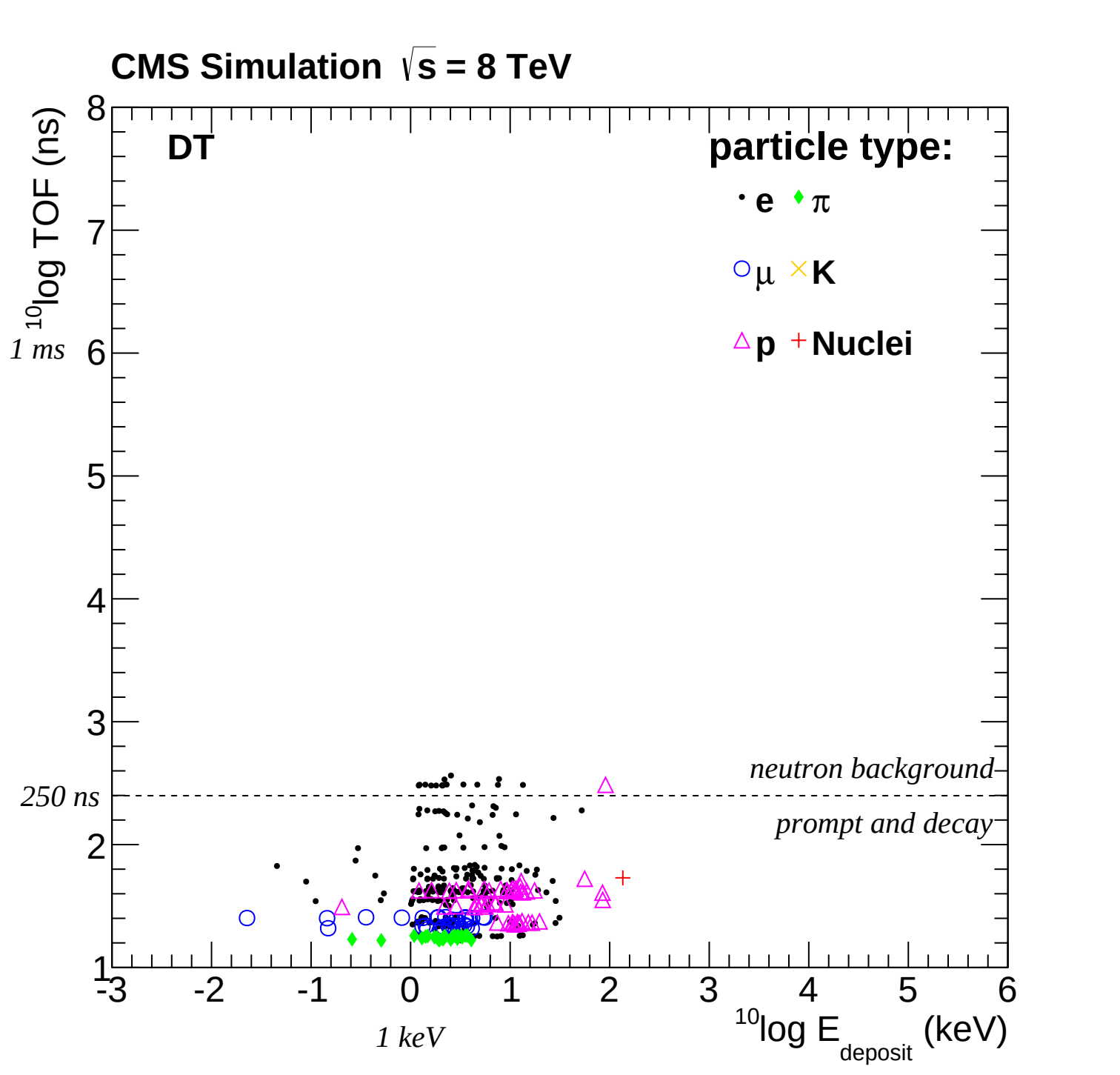

CMS Simulation √s = 8 TeV
CSC
particle type:
e
π
μ
K
p
Nuclei
neutron background
prompt and decay
1 ms
250 ns
1 MeV
10log TOF (ns)
10log E kin (MeV)
8
7
6
5
4
3
2
1
-4
-3
-2
-1
0
1
2
3
4
5

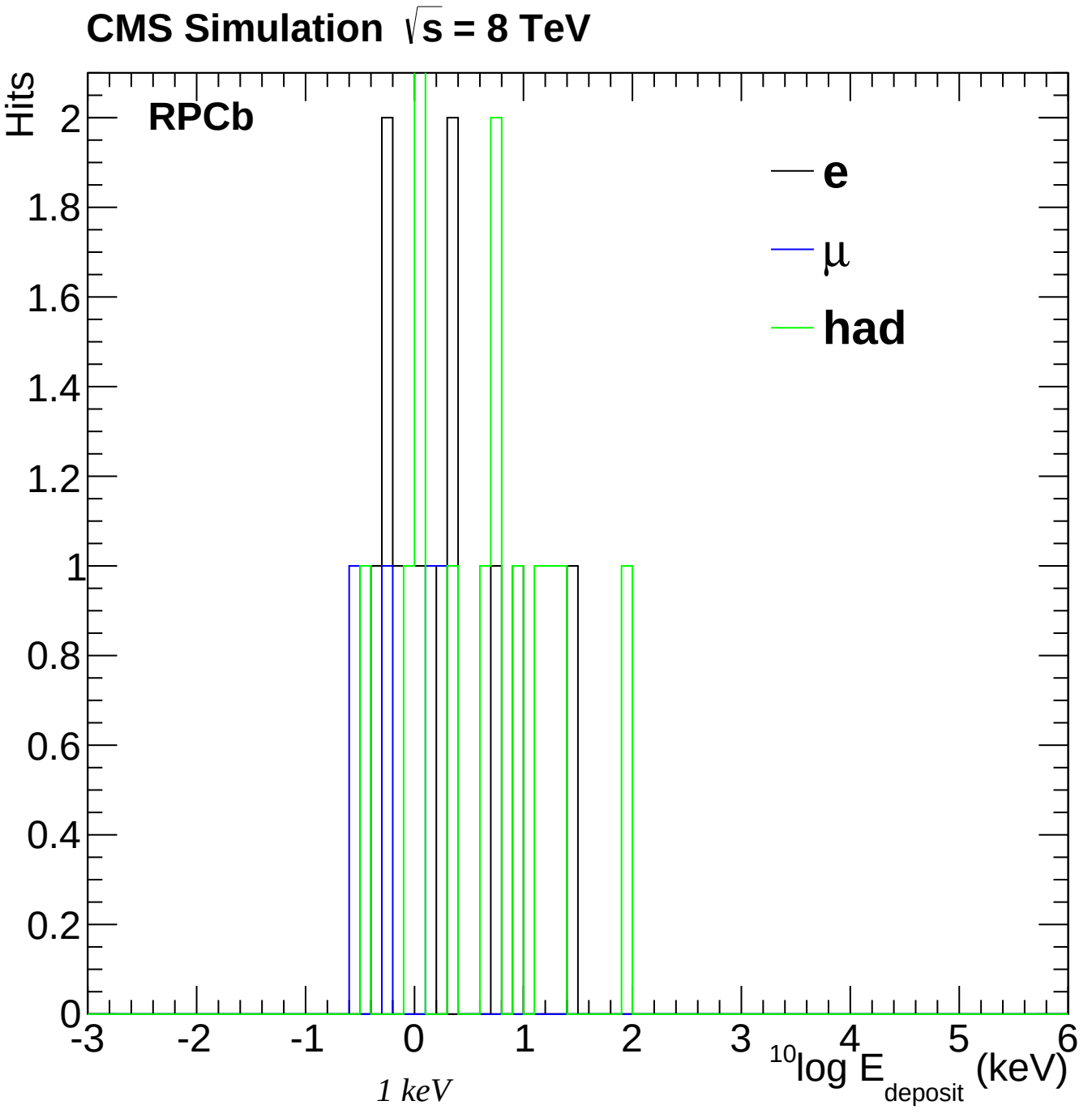

CMS Simulation √s = 8 TeV
DT
particle type:
e
π
μ
K
p
Nuclei
neutron background
prompt and decay
250 ns
1 ms
1 MeV
10log TOF (ns)
10log E kin (MeV)
8
7
6
5
4
3
2
1
-4
-3
-2
-1
0
1
2
3
4
5

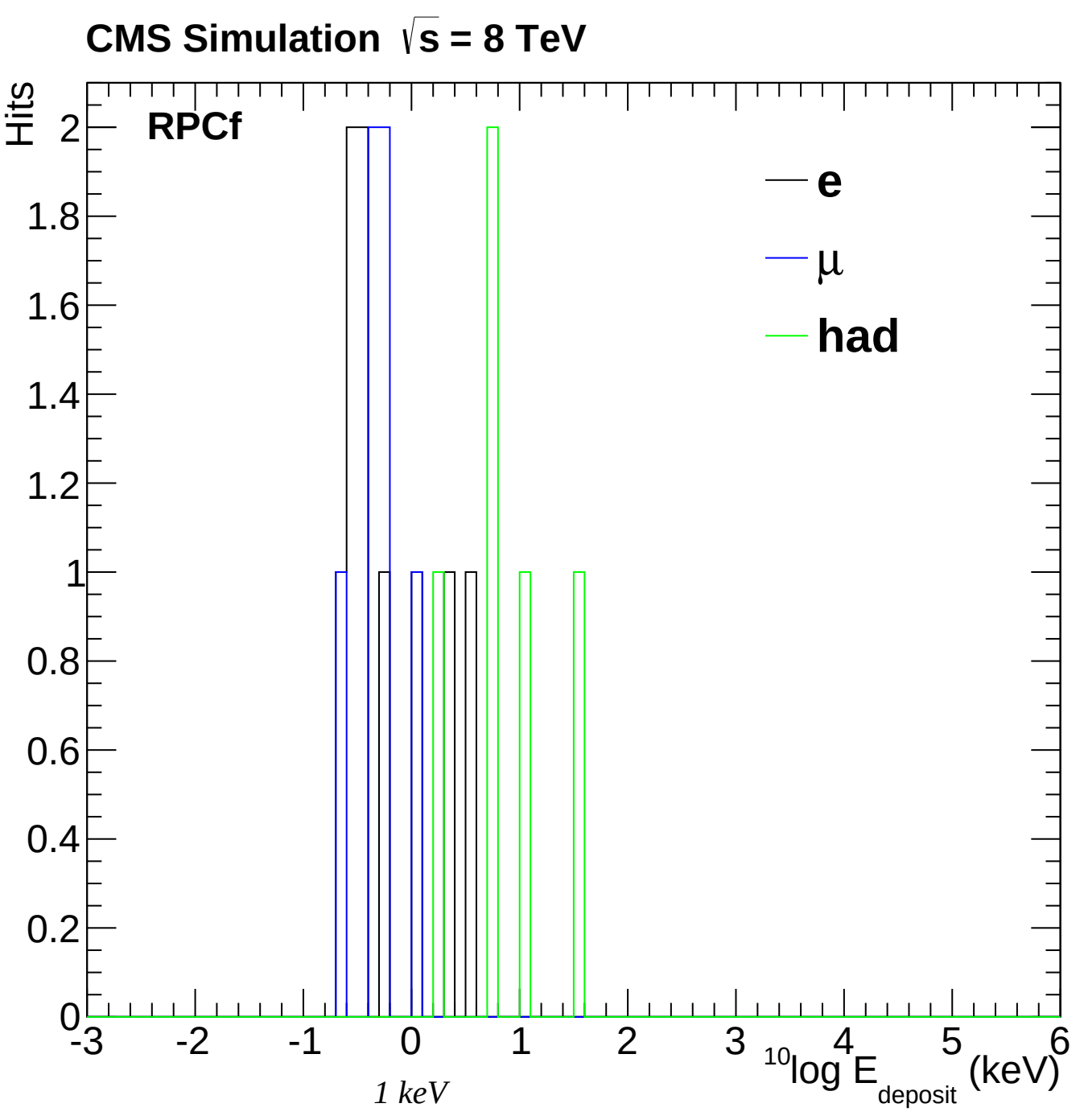

CMS Simulation √s = 8 TeV
RPCb
particle type:
e
π
μ
K
p
Nuclei
neutron background
prompt and decay
250 ns
1 ms
1 keV
10log TOF (ns)
10log E deposit (keV)
8
7
6
5
4
3
2
1
-3
-2
-1
0
1
2
3
4
5
6

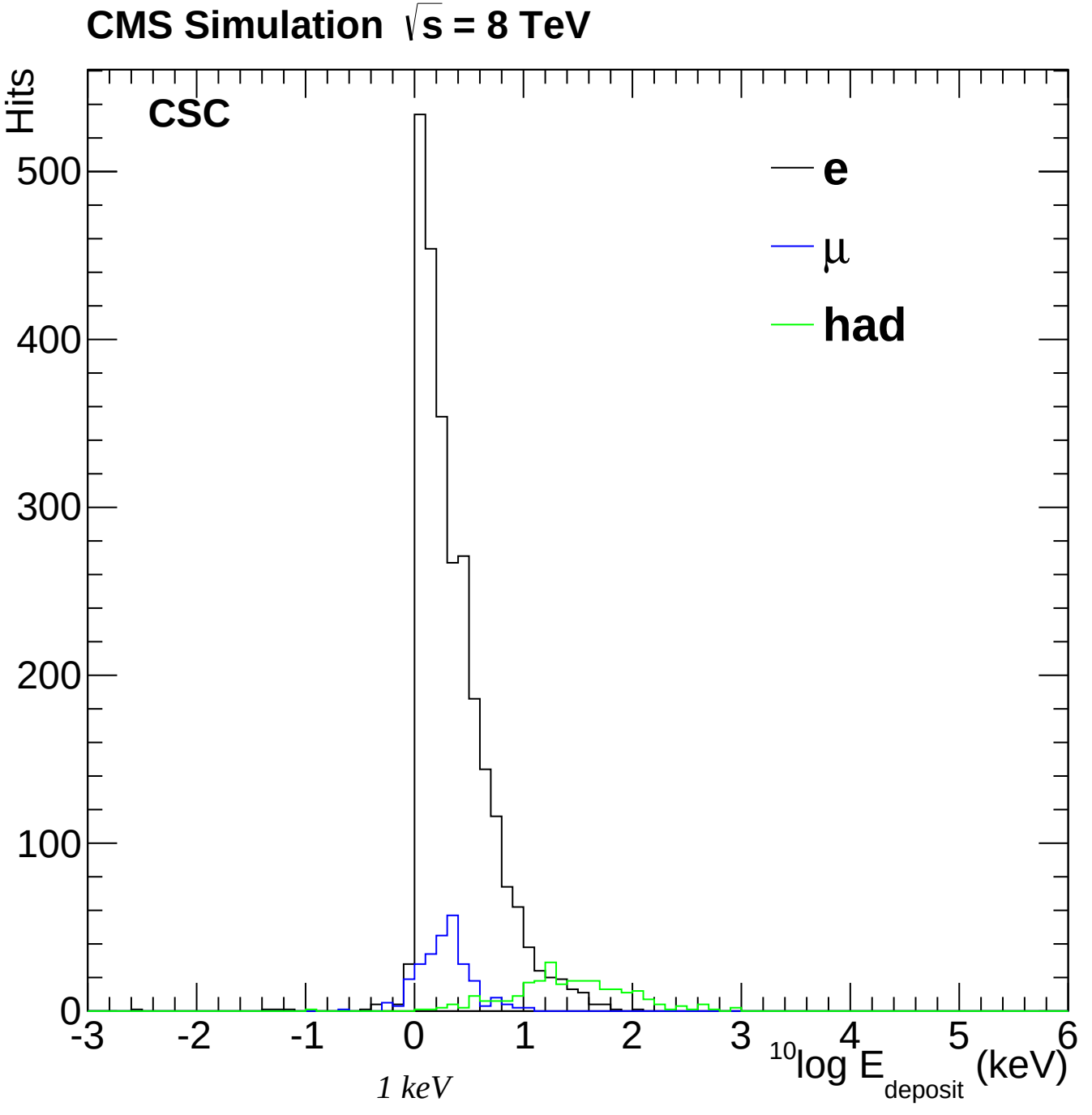

CMS Simulation √s = 8 TeV
RPCf
particle type:
e
π
μ
K
p
Nuclei
neutron background
prompt and decay
250 ns
1 ms
1 keV
10log TOF (ns)
10log E deposit (keV)
8
7
6
5
4
3
2
1
-3
-2
-1
0
1
2
3
4
5
6

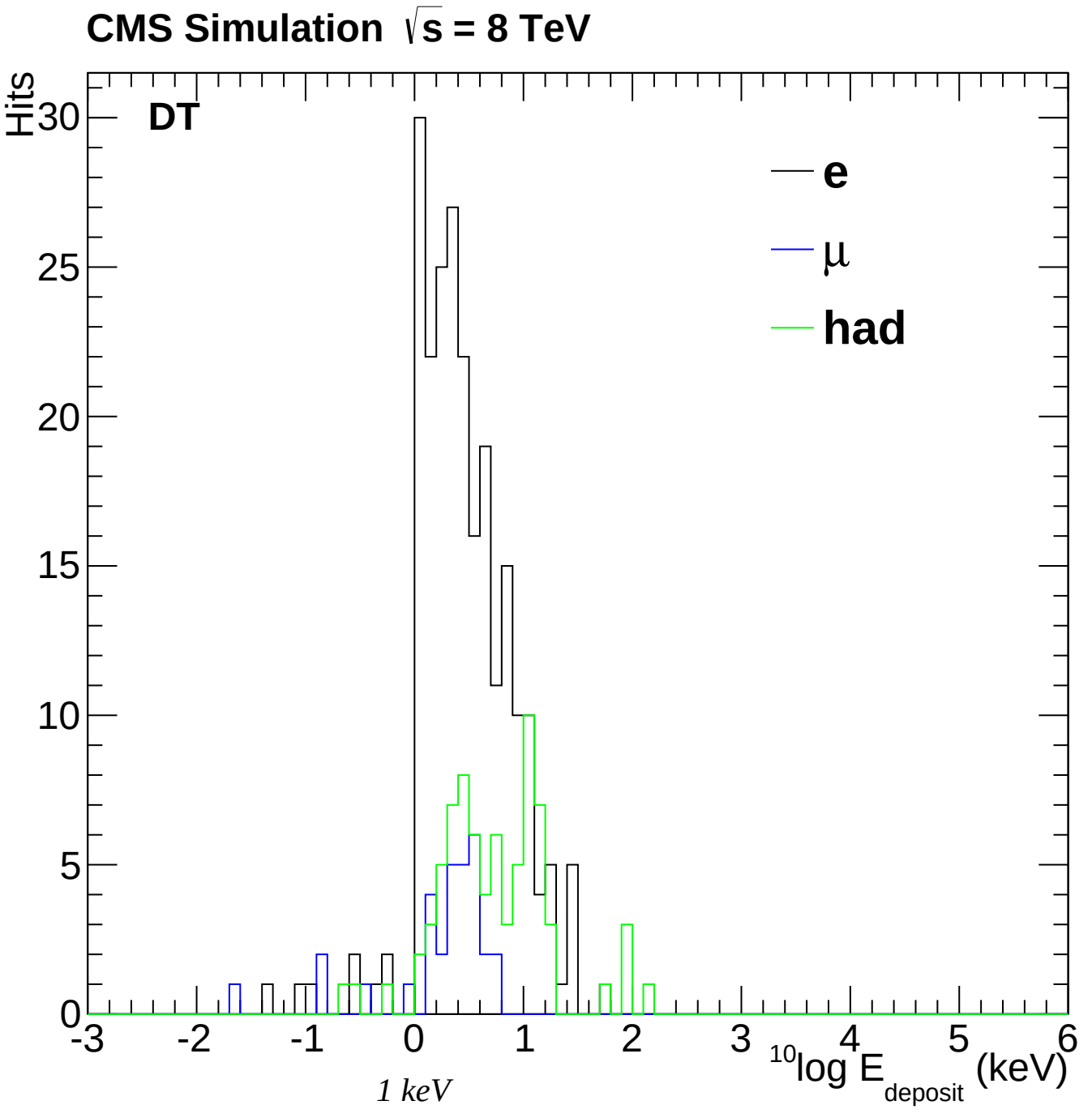

CMS Simulation √s = 8 TeV
CSC
particle type:
e
π
μ
K
p
Nuclei
neutron background
prompt and decay
1 ms
250 ns
10log TOF (ns)
10log E deposit (keV)
8
7
6
5
4
3
2
1
-3
-2
-1
0
1
2
3
4
5
6

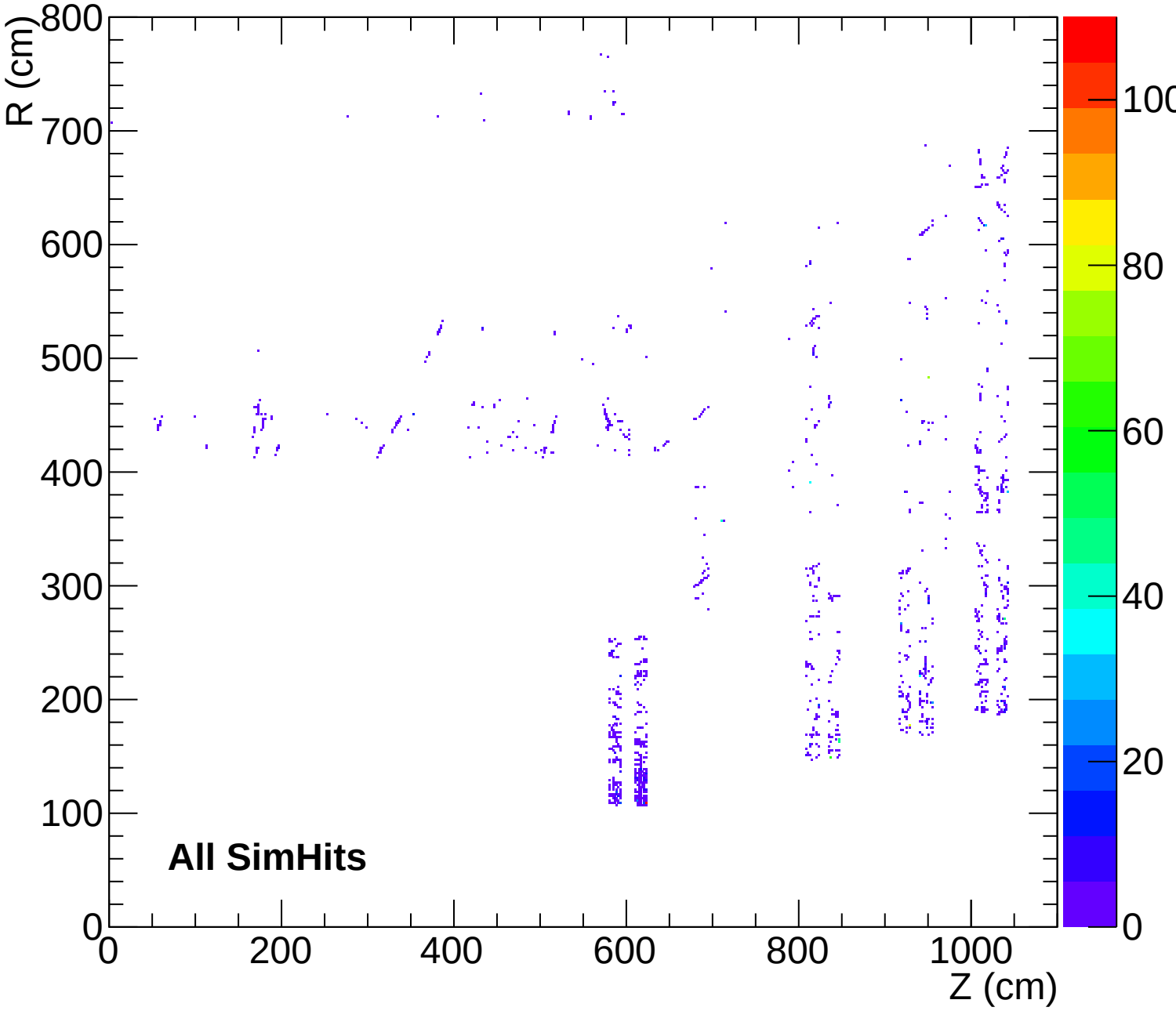

CMS Simulation √s = 8 TeV
DT
particle type:
e
π
μ
K
p
Nuclei
$^{10}$log TOF (ns)
1 ms
250 ns
neutron background
prompt and decay
1 keV
$^{10}$log E$_{deposit}$ (keV)

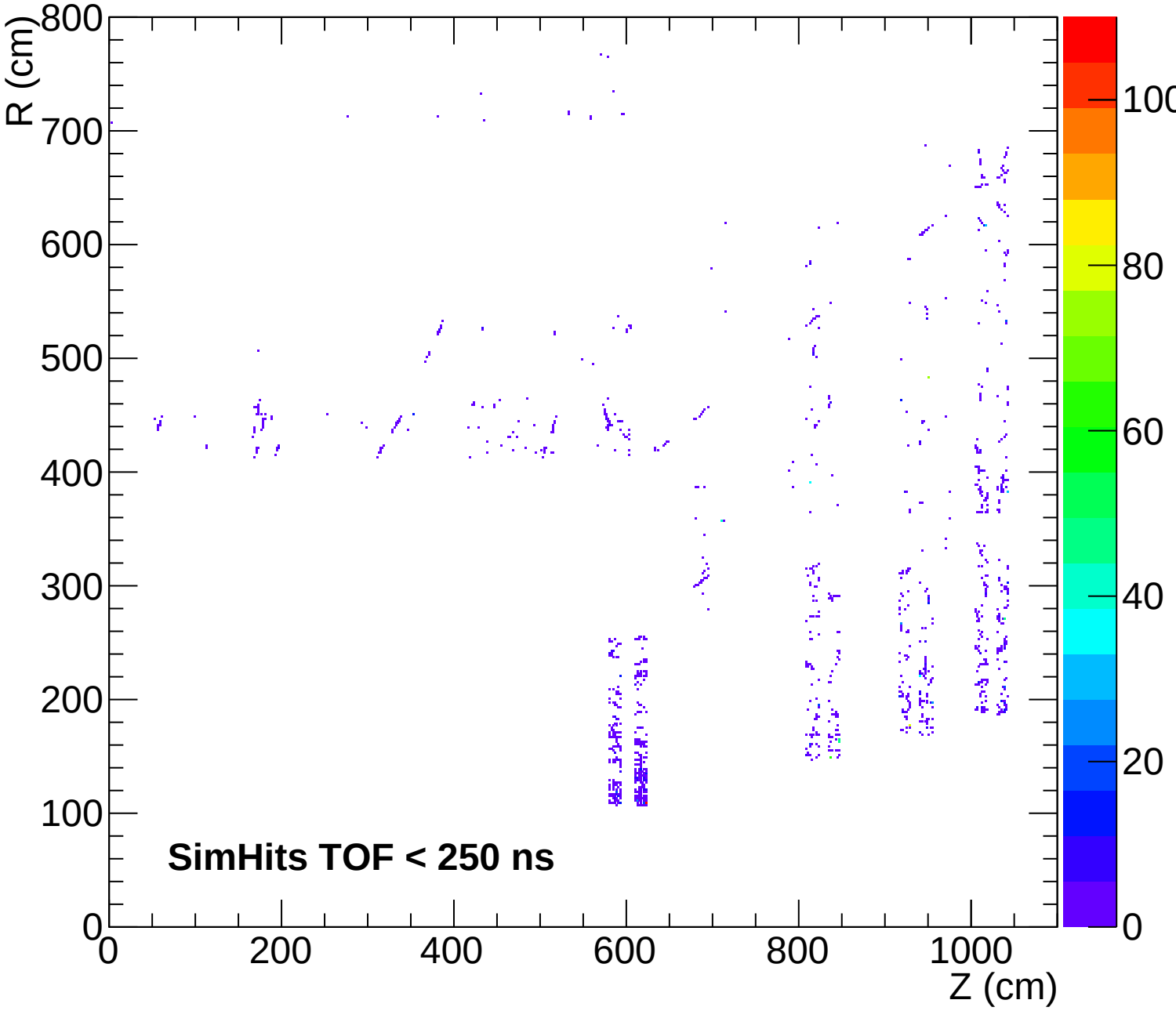

CMS Simulation √s = 8 TeV
RPCb
Hits
e
μ
had
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
-3
-2
-1
0
1
2
3
4
5
6
10log E deposit (keV)
1 keV

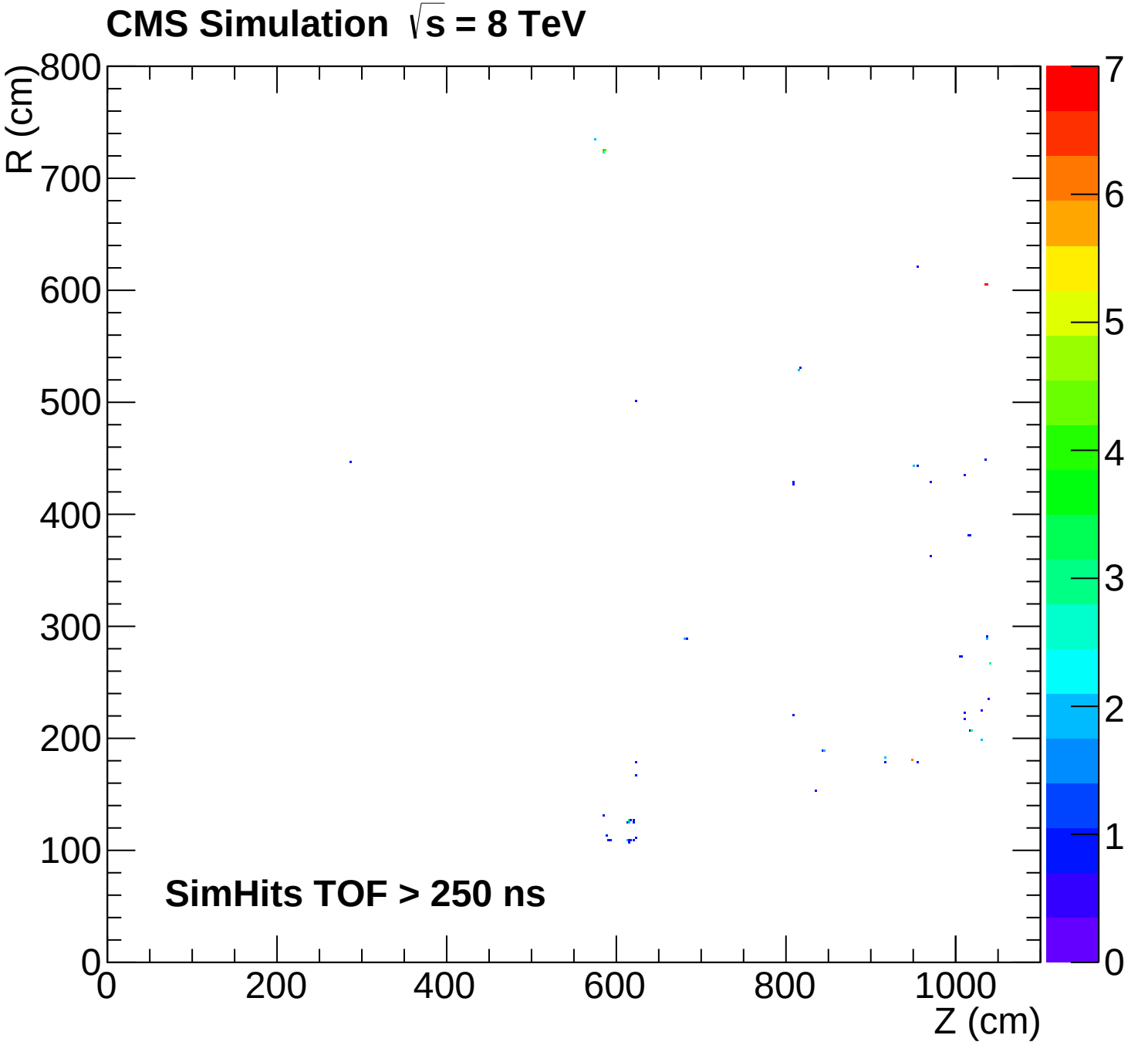

CMS Simulation √s = 8 TeV
RPCf
Hits
e
μ
had
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-3
-2
-1
0
1
2
3
4
5
6
10log E deposit (keV)
1 keV

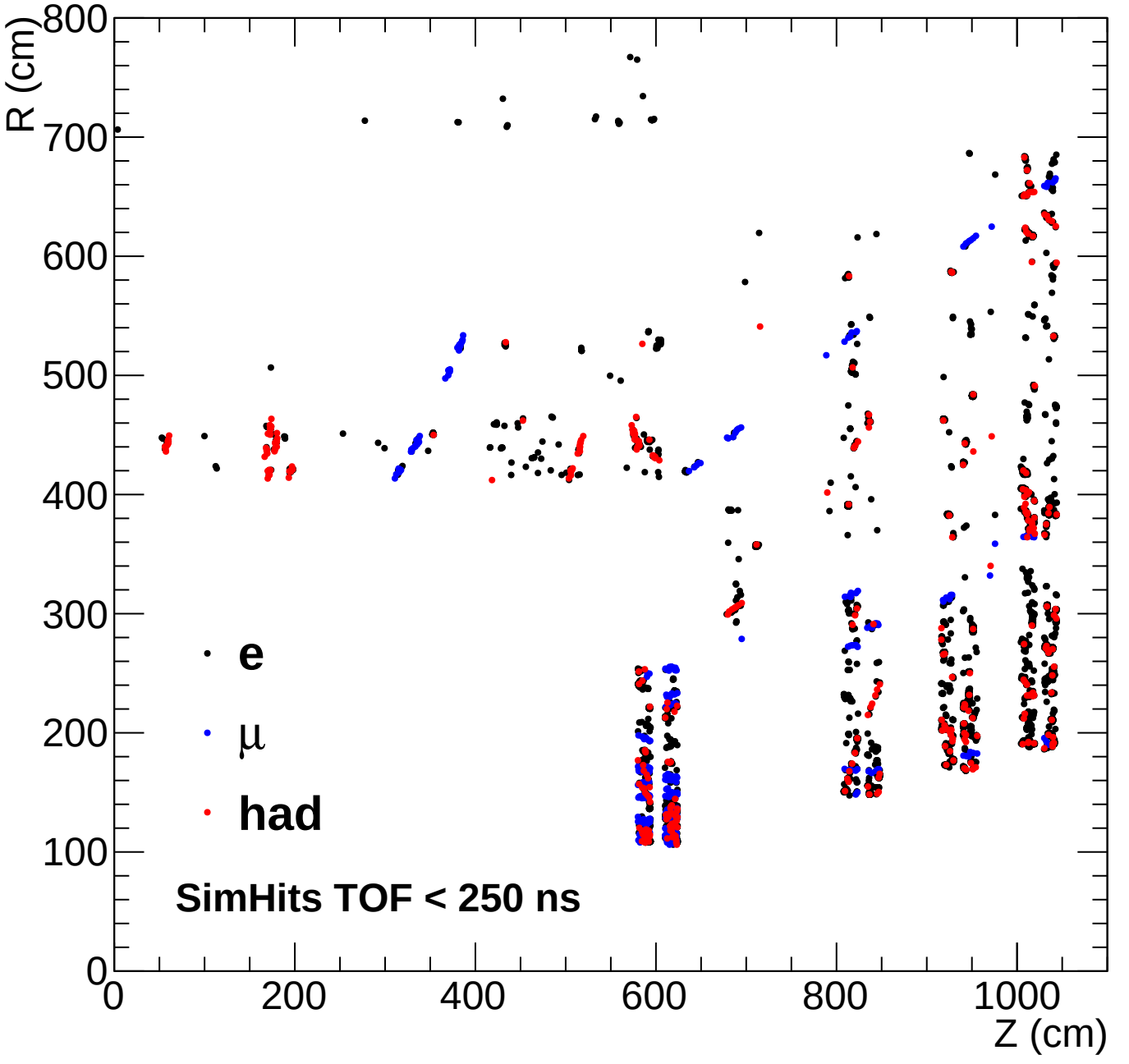

CMS Simulation √s = 8 TeV
CSC
Hits
500
400
300
200
100
0
e
μ
had
-3
-2
-1
0
1
2
3
4
5
6
1 keV
10log E deposit (keV)

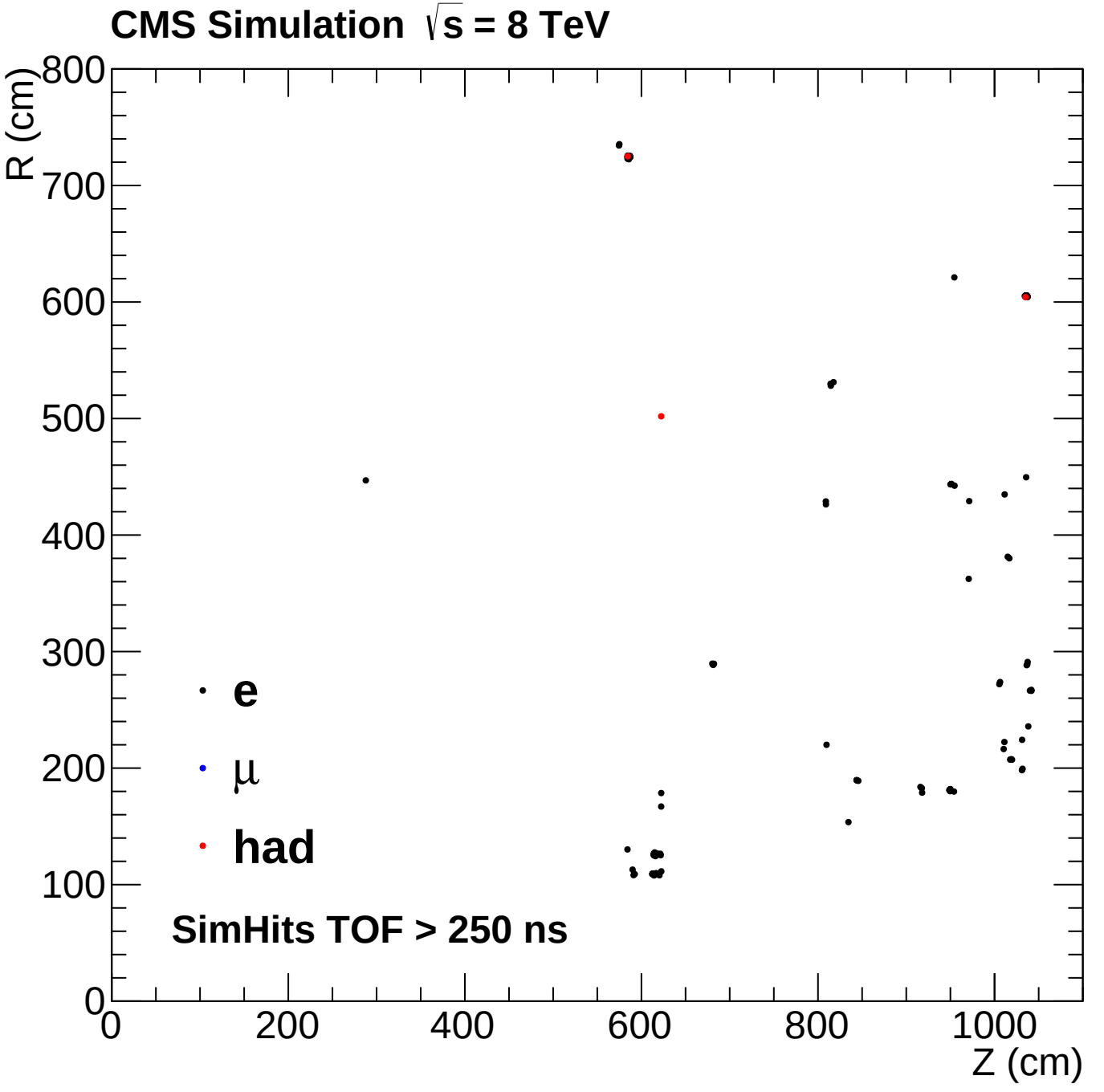

CMS Simulation √s = 8 TeV
DT
Hits
e
μ
had
0
5
10
15
20
25
30
-3
-2
-1
0
1
2
3
4
5
6
1 keV
10log E deposit (keV)

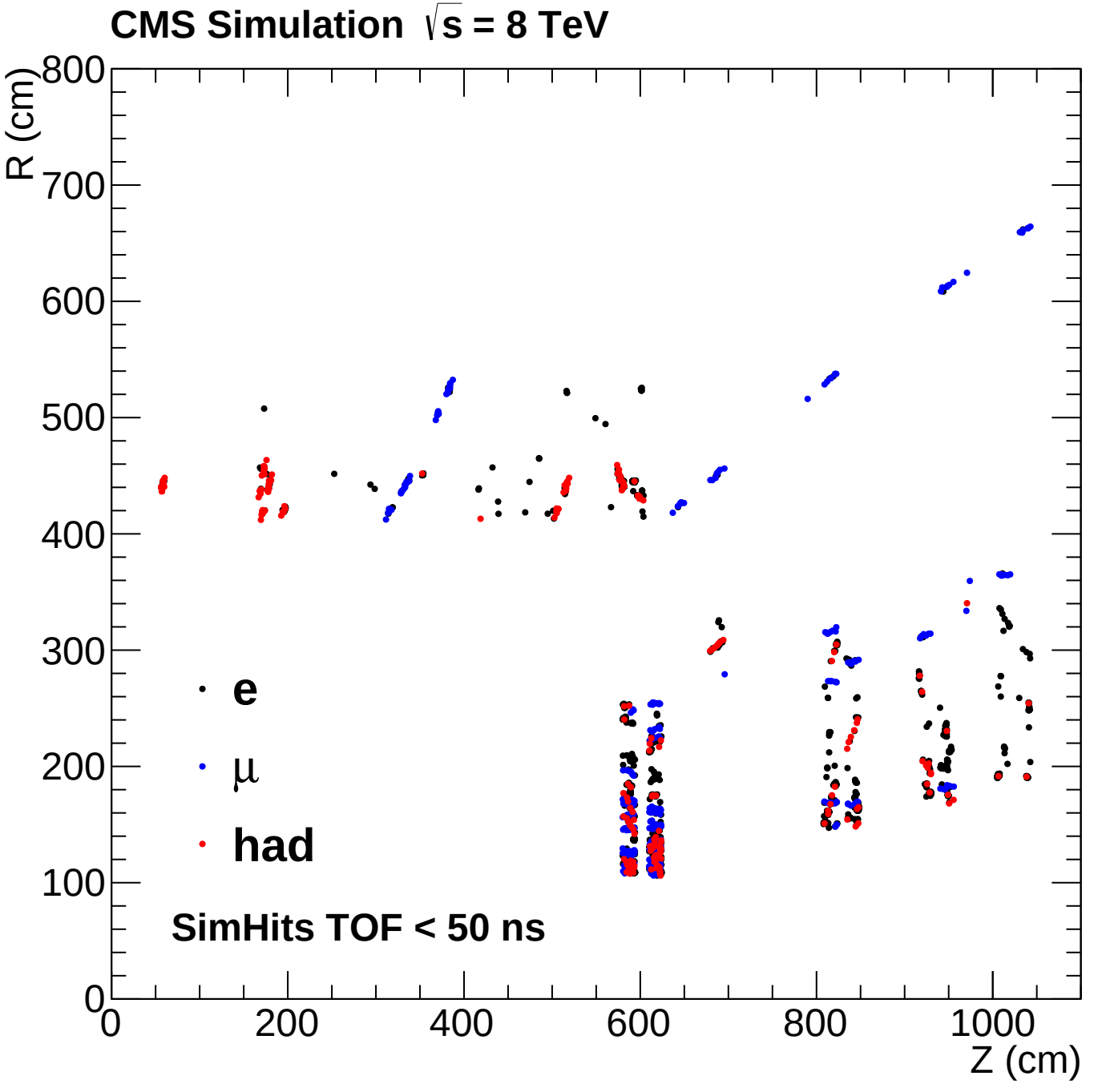

CMS Simulation √s = 8 TeV
R (cm)
Z (cm)
All SimHits
0
100
200
300
400
500
600
700
800
0
200
400
600
800
1000
0
20
40
60
80
100

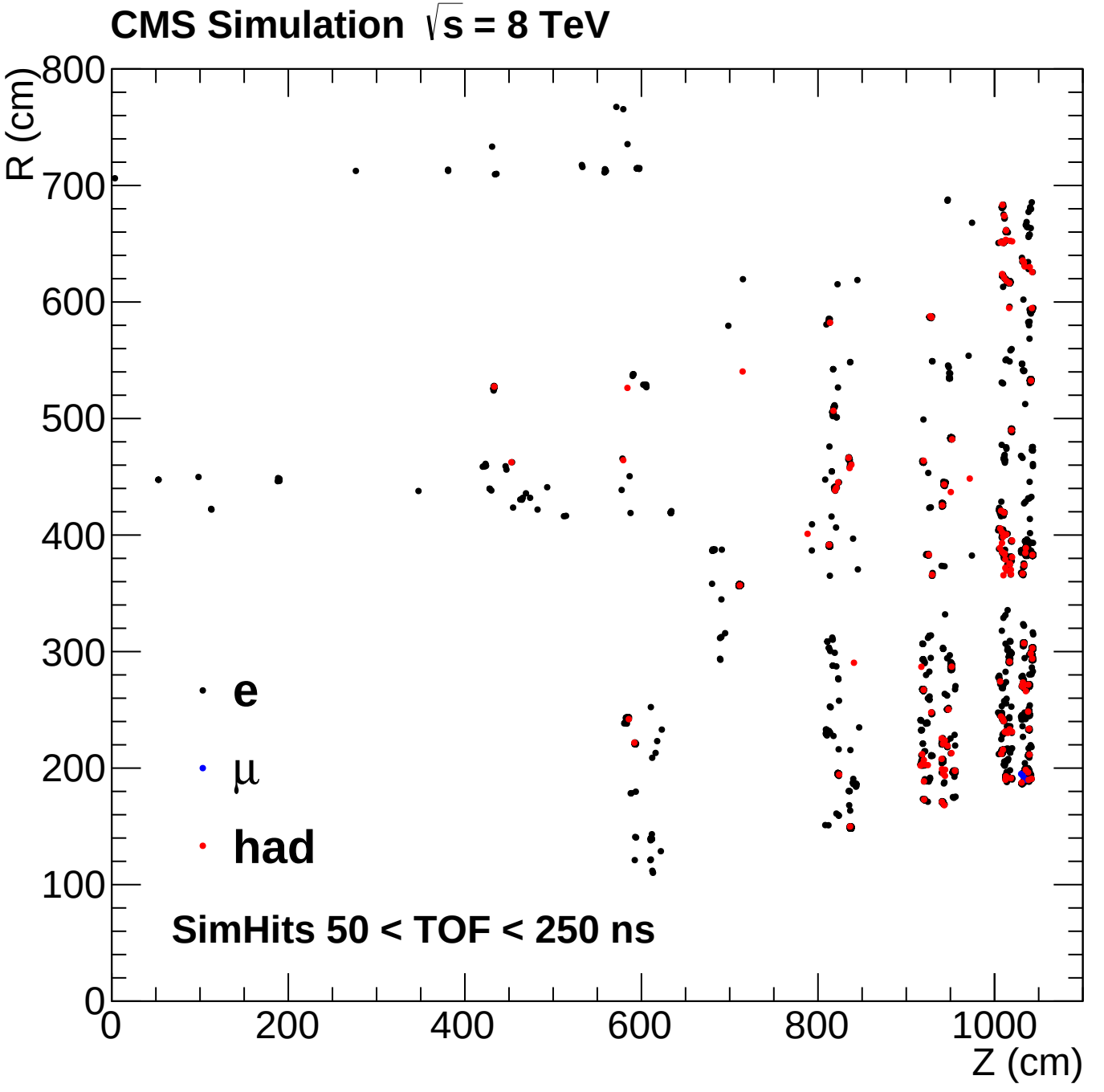

CMS Simulation √s = 8 TeV
R (cm)
Z (cm)
SimHits TOF < 250 ns
0
100
200
300
400
500
600
700
800
0
200
400
600
800
1000
0
20
40
60
80
100

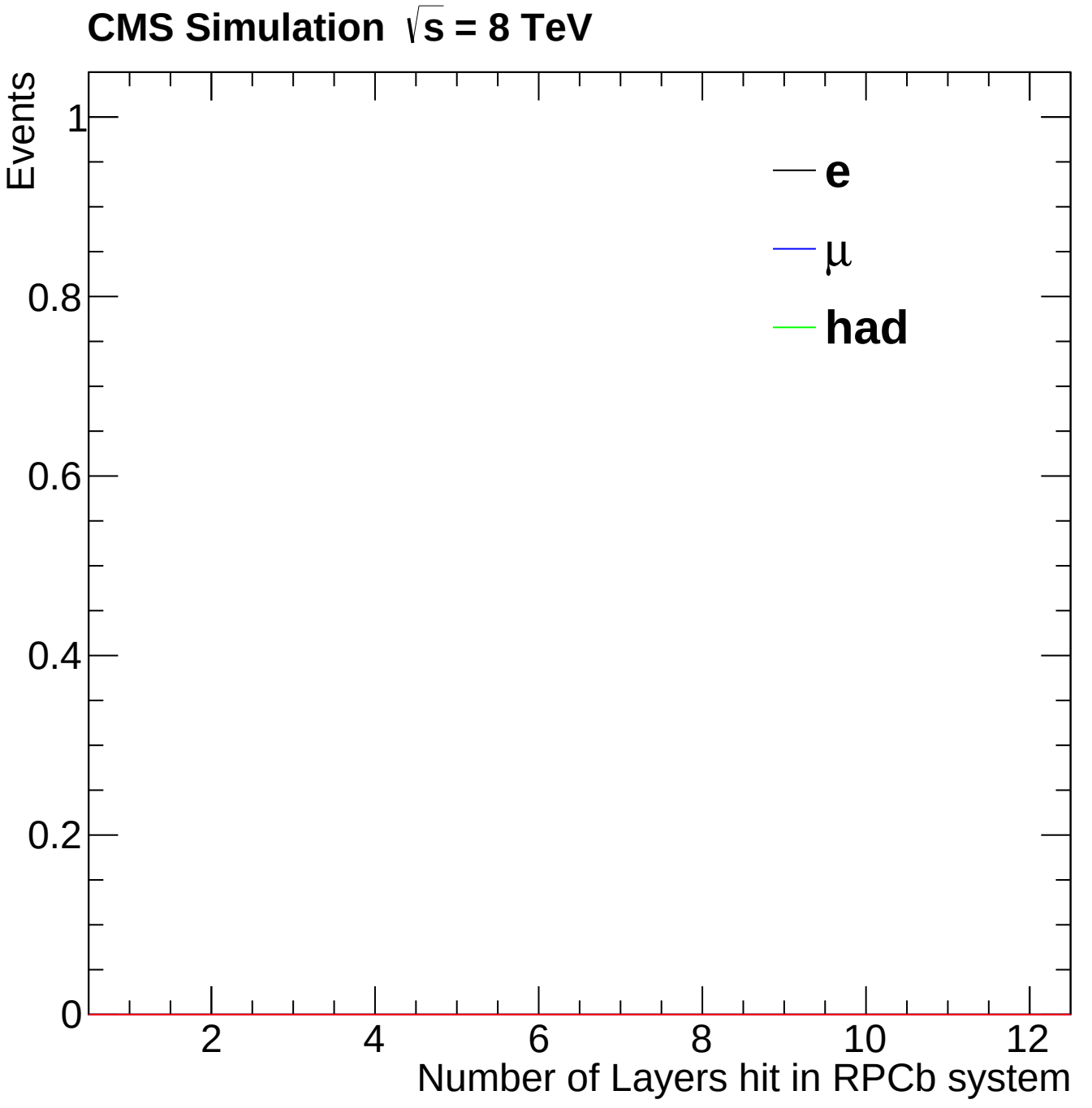

CMS Simulation √s = 8 TeV
R (cm)
800
700
600
500
400
300
200
100
0
0
200
400
600
800
1000
Z (cm)
SimHits TOF > 250 ns
7
6
5
4
3
2
1
0

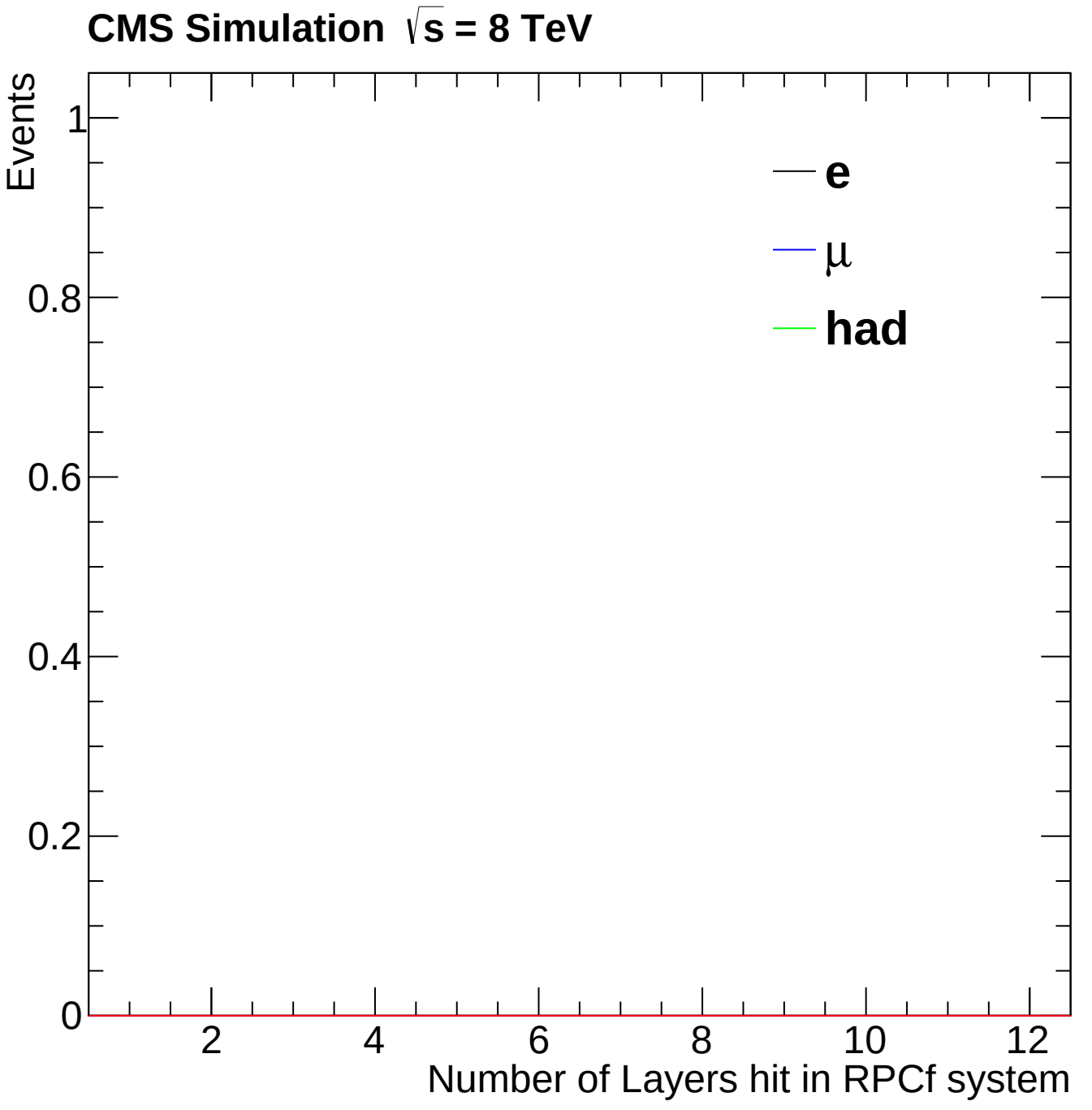

CMS Simulation √s = 8 TeV
R (cm)
Z (cm)
e
μ
had
SimHits TOF < 250 ns
0
100
200
300
400
500
600
700
800
0
200
400
600
800
1000

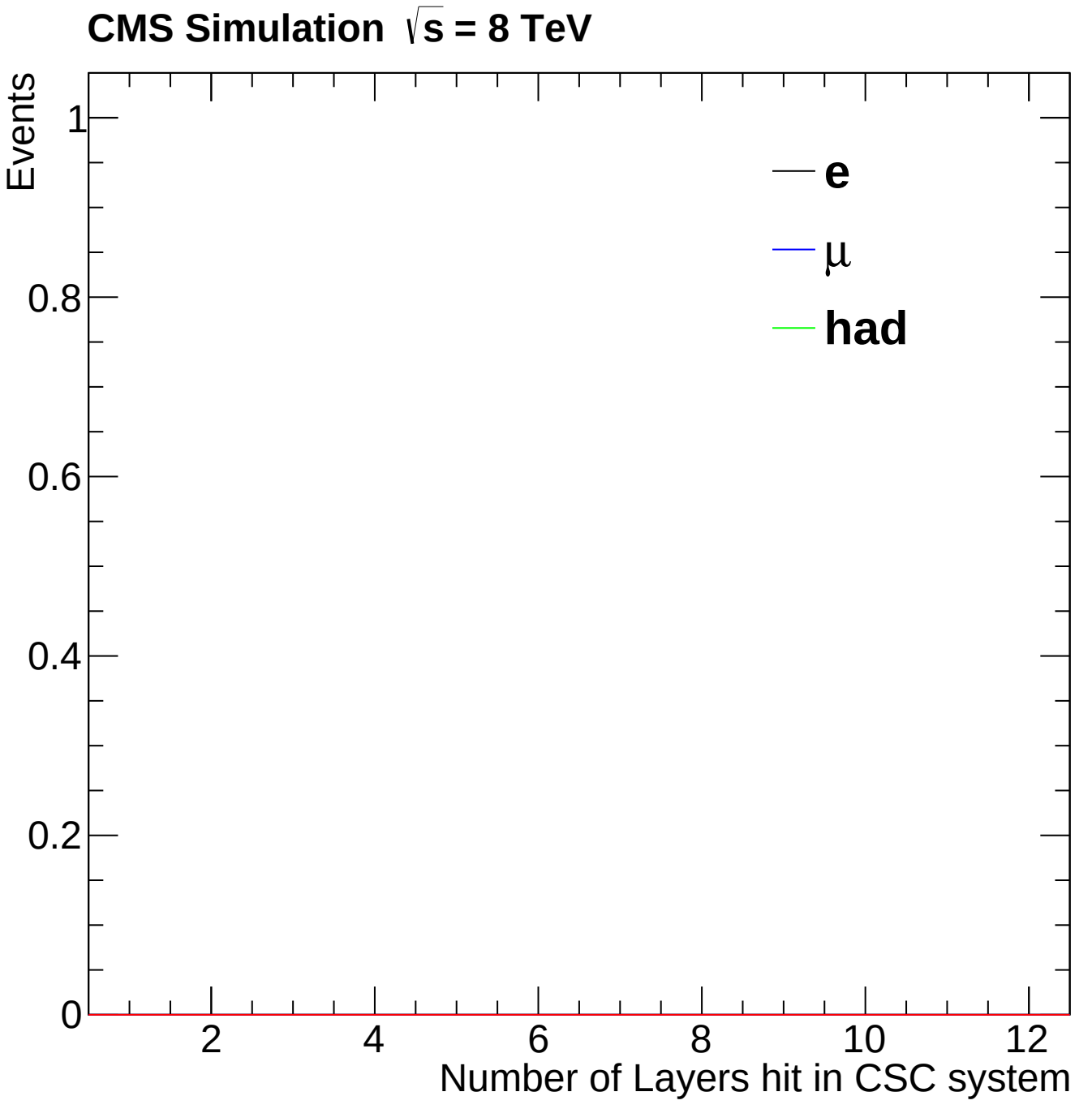

CMS Simulation √s = 8 TeV
R (cm)
Z (cm)
e
μ
had
SimHits TOF > 250 ns
0
100
200
300
400
500
600
700
800
0
200
400
600
800
1000

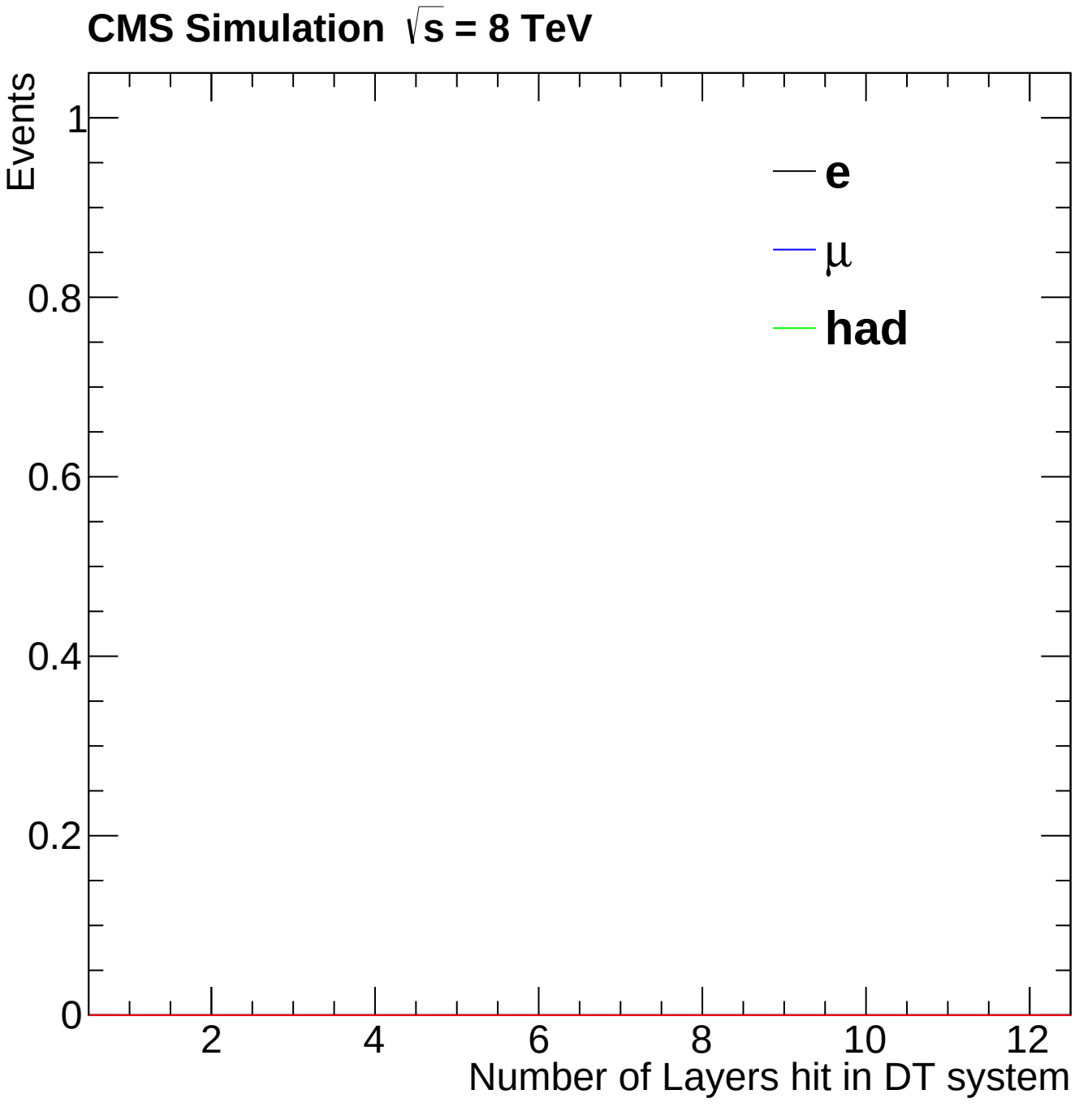

CMS Simulation √s = 8 TeV
R (cm)
Z (cm)
e
μ
had
SimHits TOF < 50 ns
0
100
200
300
400
500
600
700
800
0
200
400
600
800
1000

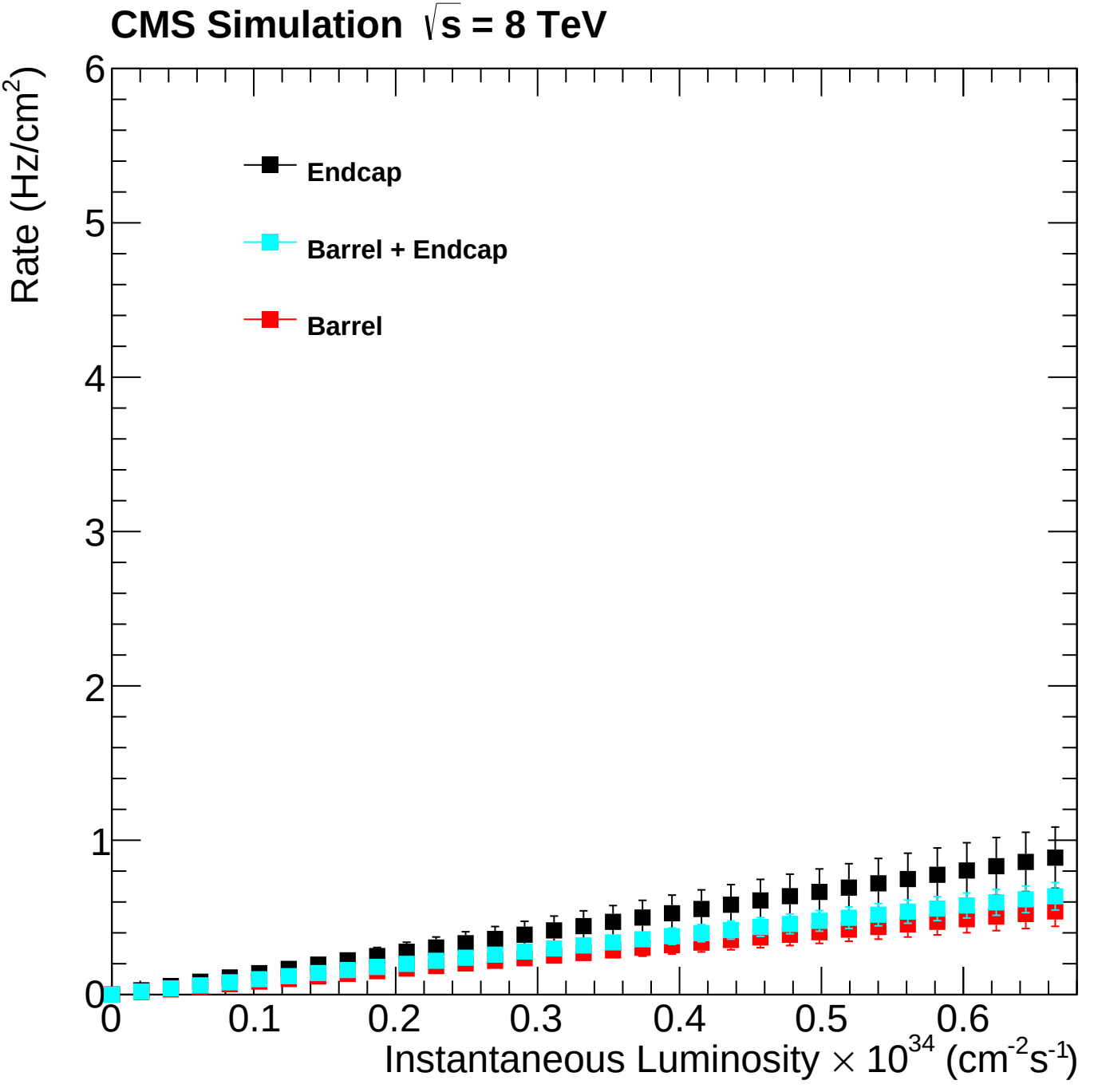

CMS Simulation √s = 8 TeV
R (cm)
Z (cm)
e
μ
had
SimHits 50 < TOF < 250 ns
0
100
200
300
400
500
600
700
800
0
200
400
600
800
1000

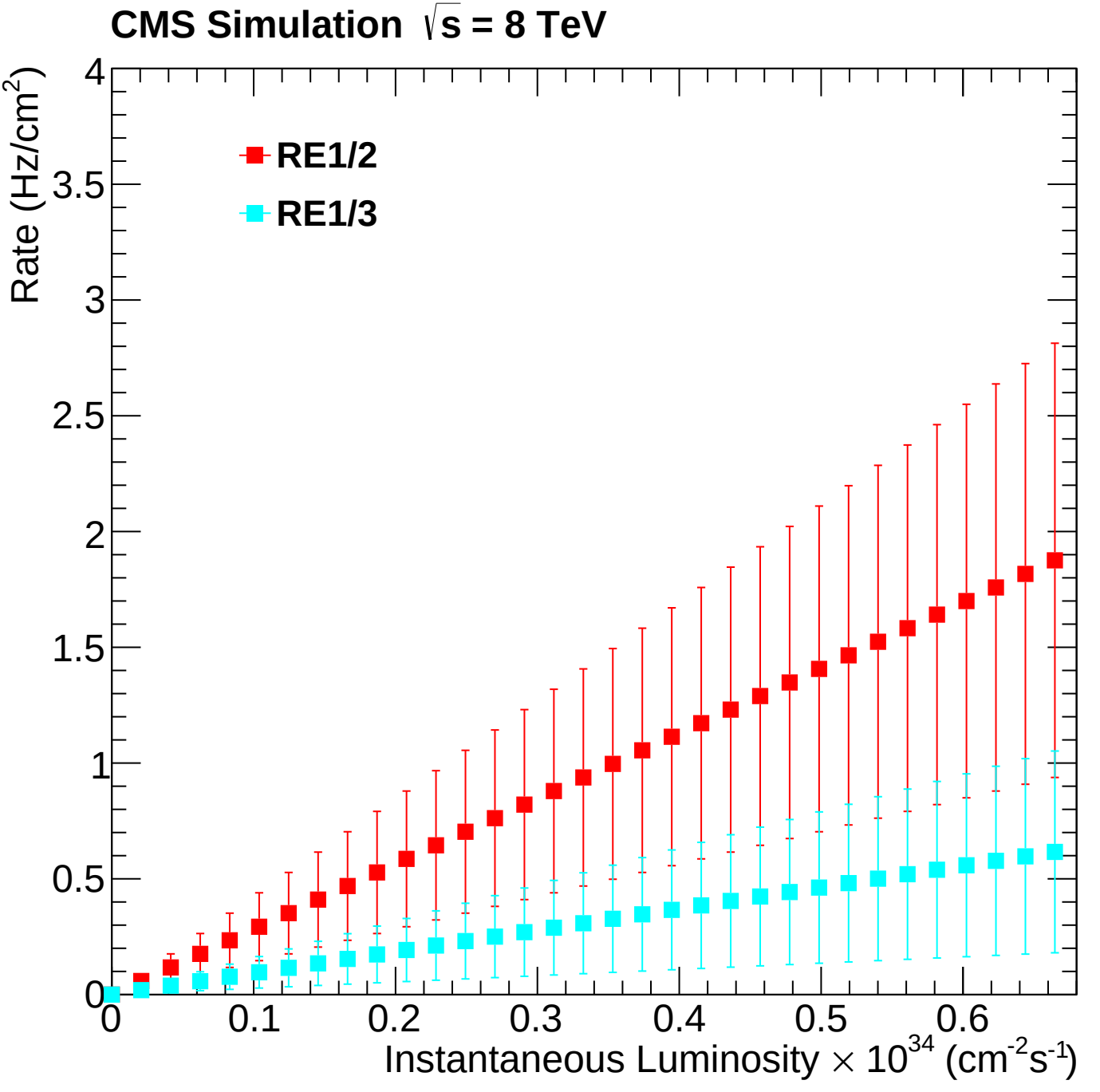

CMS Simulation √s = 8 TeV
Events
1
0.8
0.6
0.4
0.2
0
e
μ
had
2
4
6
8
10
12
Number of Layers hit in RPCb system

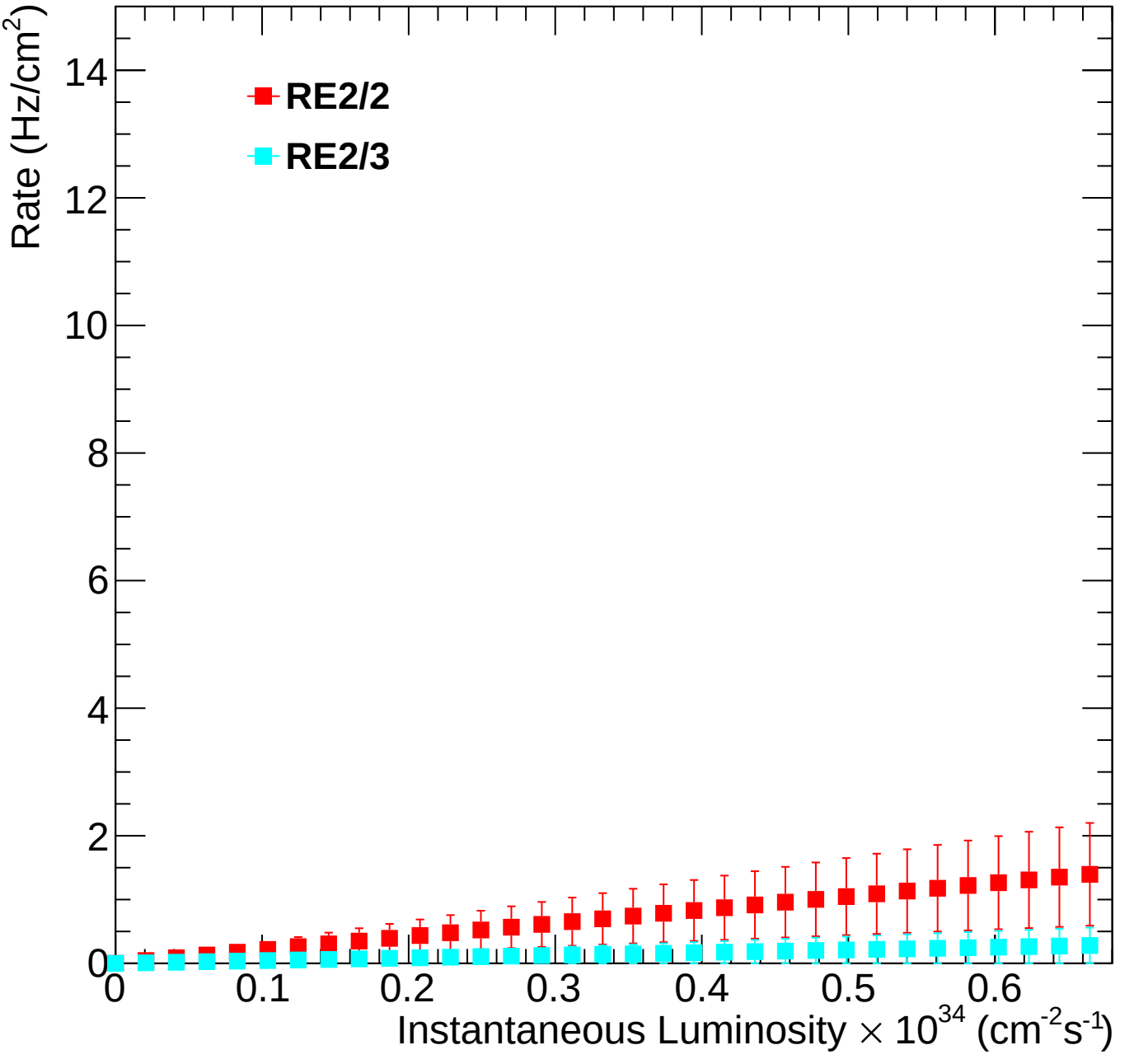

CMS Simulation √s = 8 TeV
Events
1
0.8
0.6
0.4
0.2
0
e
μ
had
2
4
6
8
10
12
Number of Layers hit in RPCf system

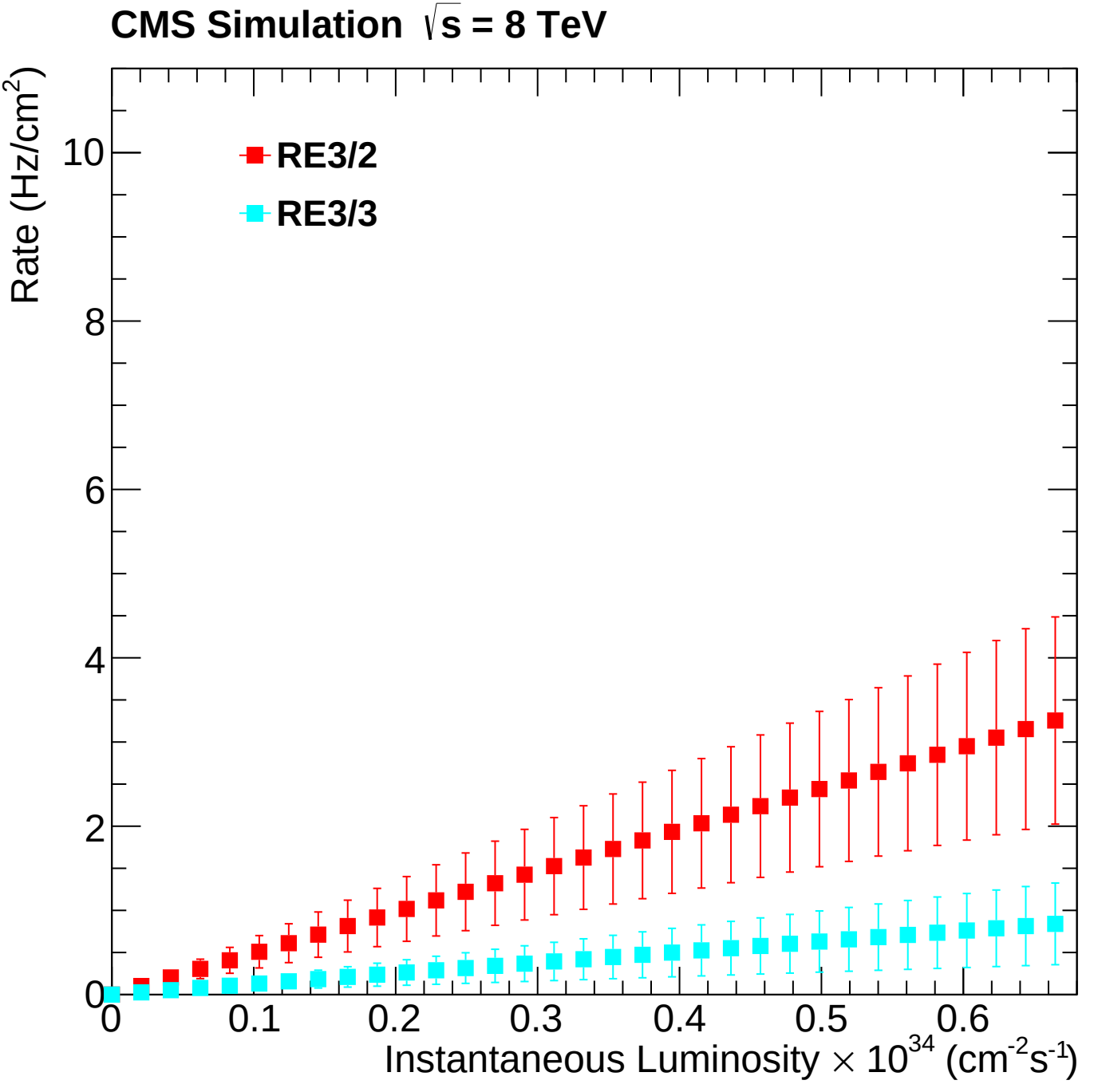

CMS Simulation √s = 8 TeV
Events
1
0.8
0.6
0.4
0.2
0
2
4
6
8
10
12
Number of Layers hit in CSC system
e
μ
had

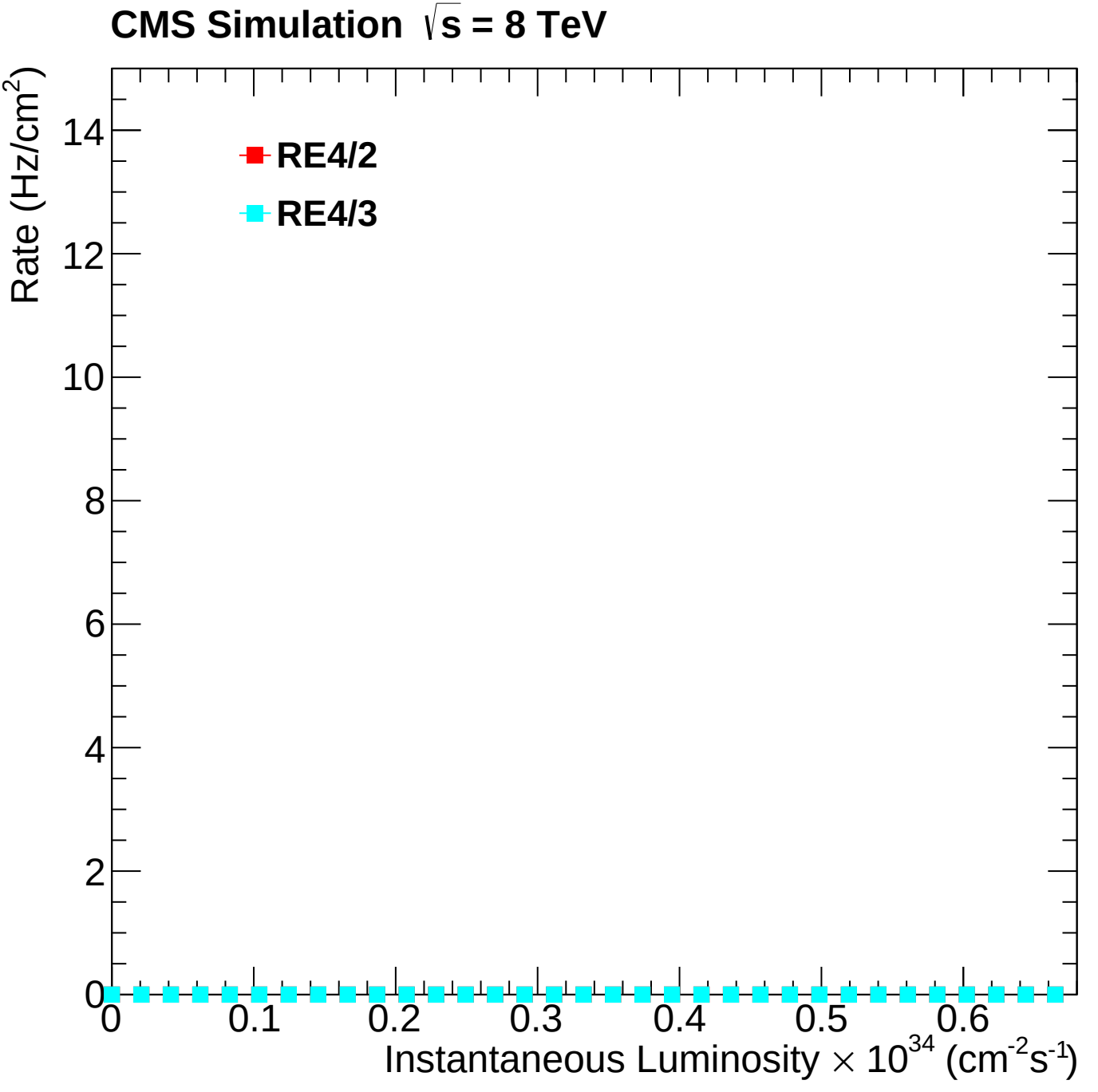

CMS Simulation √s = 8 TeV
Events
1
0.8
0.6
0.4
0.2
0
e
μ
had
2
4
6
8
10
12
Number of Layers hit in DT system


CMS Simulation $\sqrt{s}$ = 8 TeV
Rate (Hz/cm$^2$)
Endcap
Barrel + Endcap
Barrel
0
1
2
3
4
5
6
0
0.1
0.2
0.3
0.4
0.5
0.6
Instantaneous Luminosity × 10$^{34}$ (cm$^{-2}$s$^{-1}$)


CMS Simulation √s = 8 TeV
RE1/2
RE1/3
Rate (Hz/cm²)
Instantaneous Luminosity × 10³⁴ (cm⁻²s⁻¹)
0
0.5
1
1.5
2
2.5
3
3.5
4
0.1
0.2
0.3
0.4
0.5
0.6


CMS Simulation √s = 8 TeV
RE2/2
RE2/3
Rate (Hz/cm²)
0
2
4
6
8
10
12
14
0
0.1
0.2
0.3
0.4
0.5
0.6
Instantaneous Luminosity × 10³⁴ (cm⁻²s⁻¹)


CMS Simulation √s = 8 TeV
RE3/2
RE3/3
Rate (Hz/cm²)
0
2
4
6
8
10
0
0.1
0.2
0.3
0.4
0.5
0.6
Instantaneous Luminosity × 10³⁴ (cm⁻²s⁻¹)


CMS Simulation √s = 8 TeV
RE4/2
RE4/3
Rate (Hz/cm²)
0
2
4
6
8
10
12
14
0
0.1
0.2
0.3
0.4
0.5
0.6
Instantaneous Luminosity × 10³⁴ (cm⁻²s⁻¹)