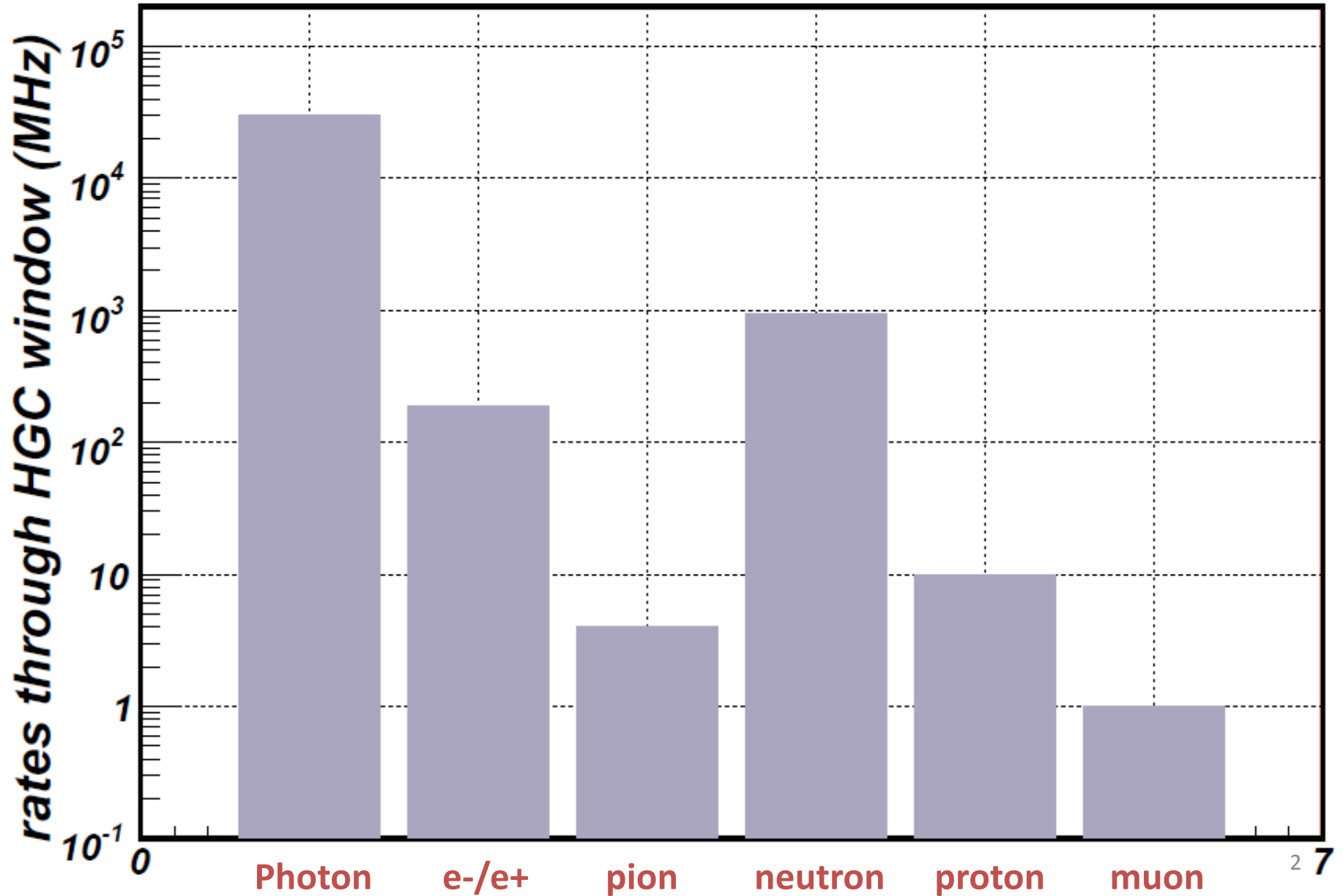


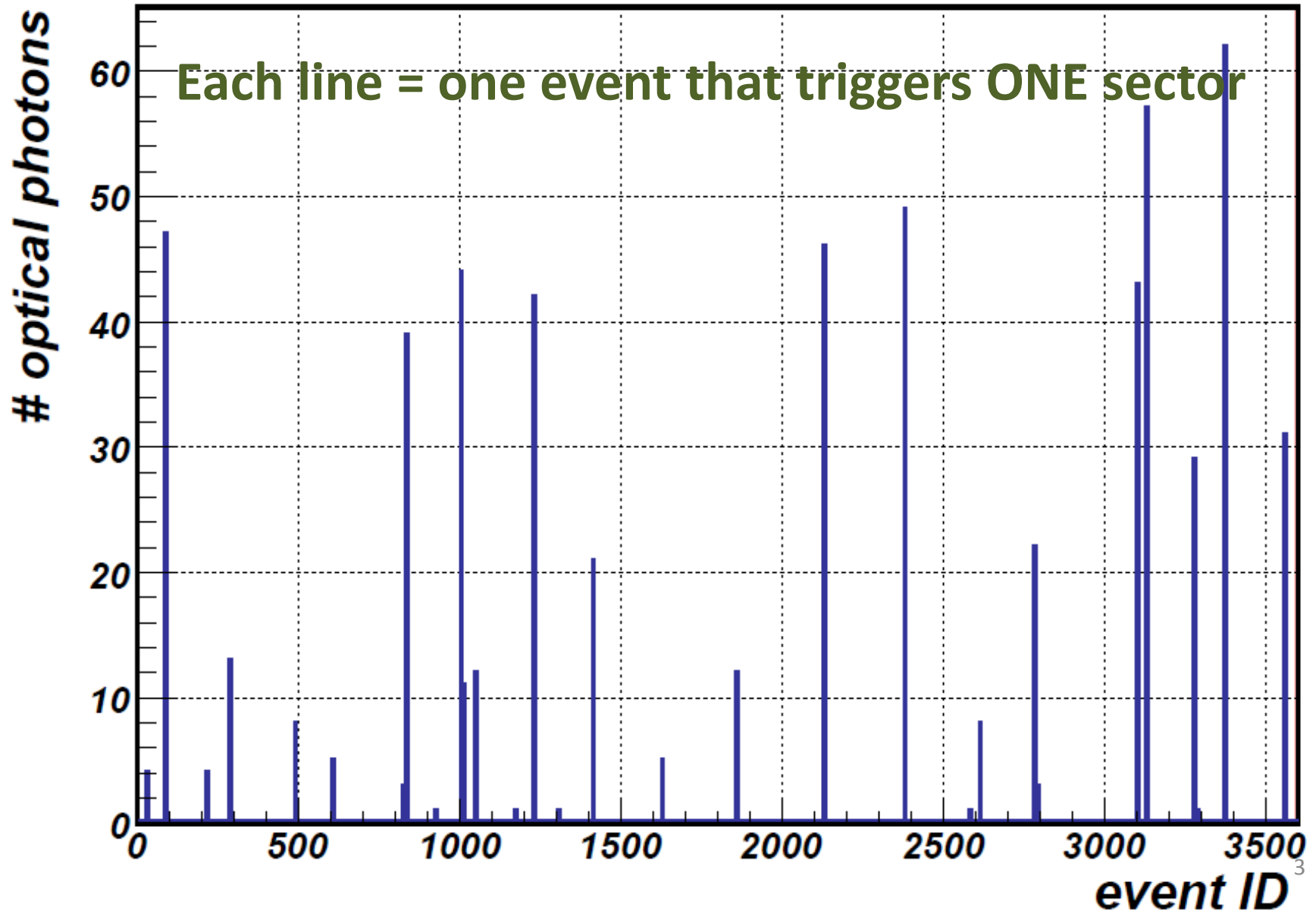
# Heavy Gas Cerenkov: Rate Simulation

# Heavy Gas Cerenkov Simulation



# Heavy Gas Cerenkov Simulation

Number of optical-photons per event, EM Background



# Heavy Gas Cerenkov Simulation

- Pion Cerenkov Threshold: 2.2 GeV
- Kaon Cerenkov Threshold: 7.6 GeV
- Electron Cerenkov Threshold: ~ 8MeV

## EM Background Rates per sector in MHz

	1 pe or more	2 pe or more	4 pe or more
EM background rate	0.97	0.81	0.75
EM background rate with thin window	1.10	0.94	0.80

**Thin window = upstream thin window of the HG Cerenkov**

# Heavy Gas Cerenkov Simulation

- Pion Cerenkov Threshold: 2.2 GeV
- Kaon Cerenkov Threshold: 7.6 GeV
- Electron Cerenkov Threshold: ~ 8MeV

Target Background Rates from pion per sector in **kHz**

Trig.	pi0	pi0 up	pi0 down	pi+	pi+ up	pi+ down	pi-	pi- up	pi- down	Total
1 pe or more	27.54	22.13	31.52	2.29	4.77	4.10	2.51	4.14	4.07	103.07
2 pe or more	25.41	17.71	27.05	1.84	3.74	3.21	1.97	3.30	3.01	87.24
4 pe or more	23.04	13.19	22.36	1.5	3.13	2.64	1.57	2.85	2.49	72.77

**Up = upstream TARGET window**

**Down = downstream TARGET window**

# Heavy Gas Cerenkov Simulation

- Pion Cerenkov Threshold: 2.2 GeV
- Kaon Cerenkov Threshold: 7.6 GeV
- Electron Cerenkov Threshold:  $\sim 8$ MeV

Target Background Rates from pion per sector in **kHz**

Trig.	pi0	pi0 up	pi0 down	pi+	pi+ up	pi+ down	pi-	pi- up	pi- down	Total
1 pe or more	28.30	22.40	30.87	2.33	4.65	4.10	2.52	4.30	4.21	103.68
2 pe or more	26.23	17.85	26.73	1.89	3.63	3.20	1.92	3.32	3.20	87.97
4 pe or more	23.96	13.74	22.27	1.60	2.99	2.54	1.61	2.79	2.64	74.14

**With Thin Window**