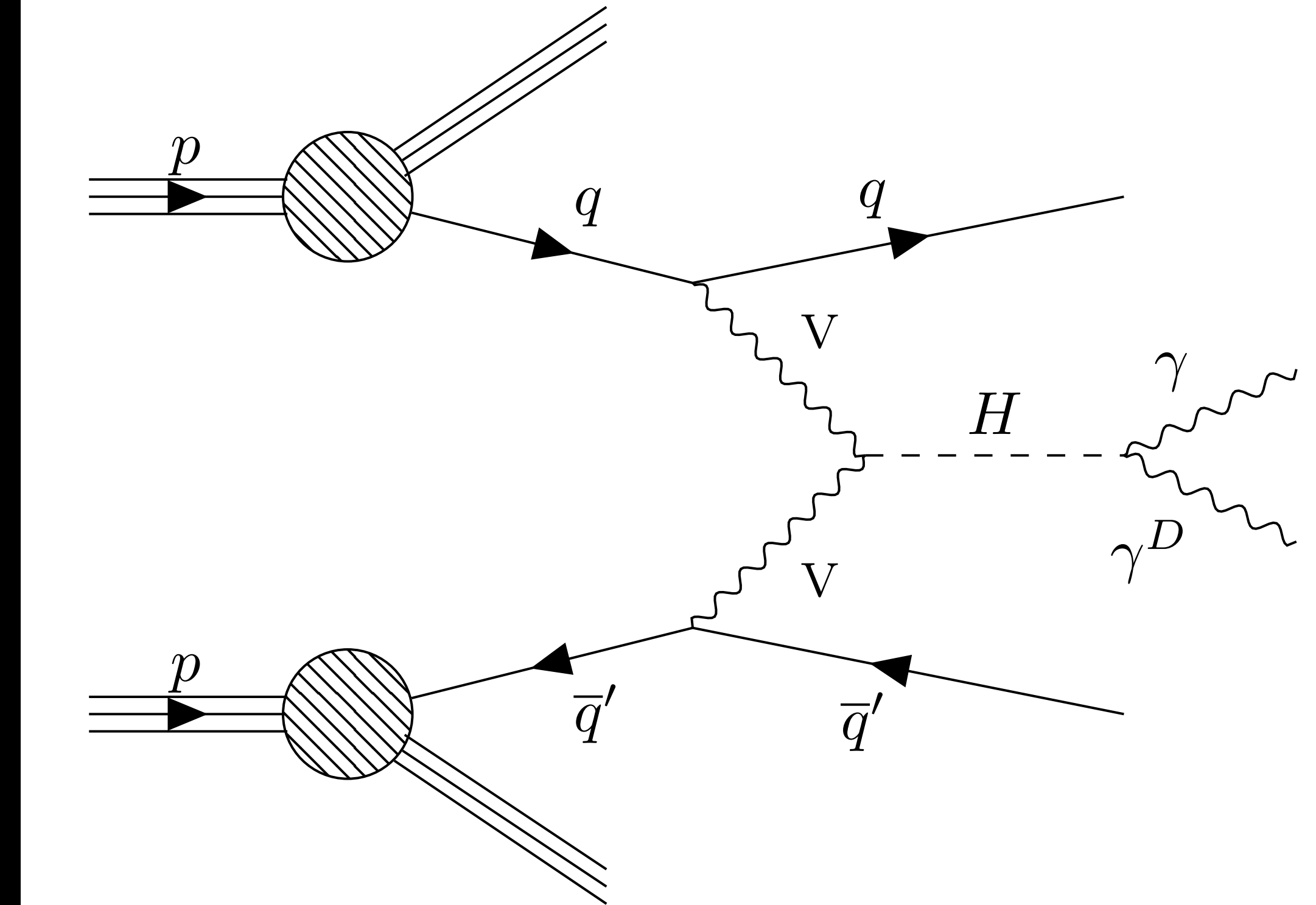
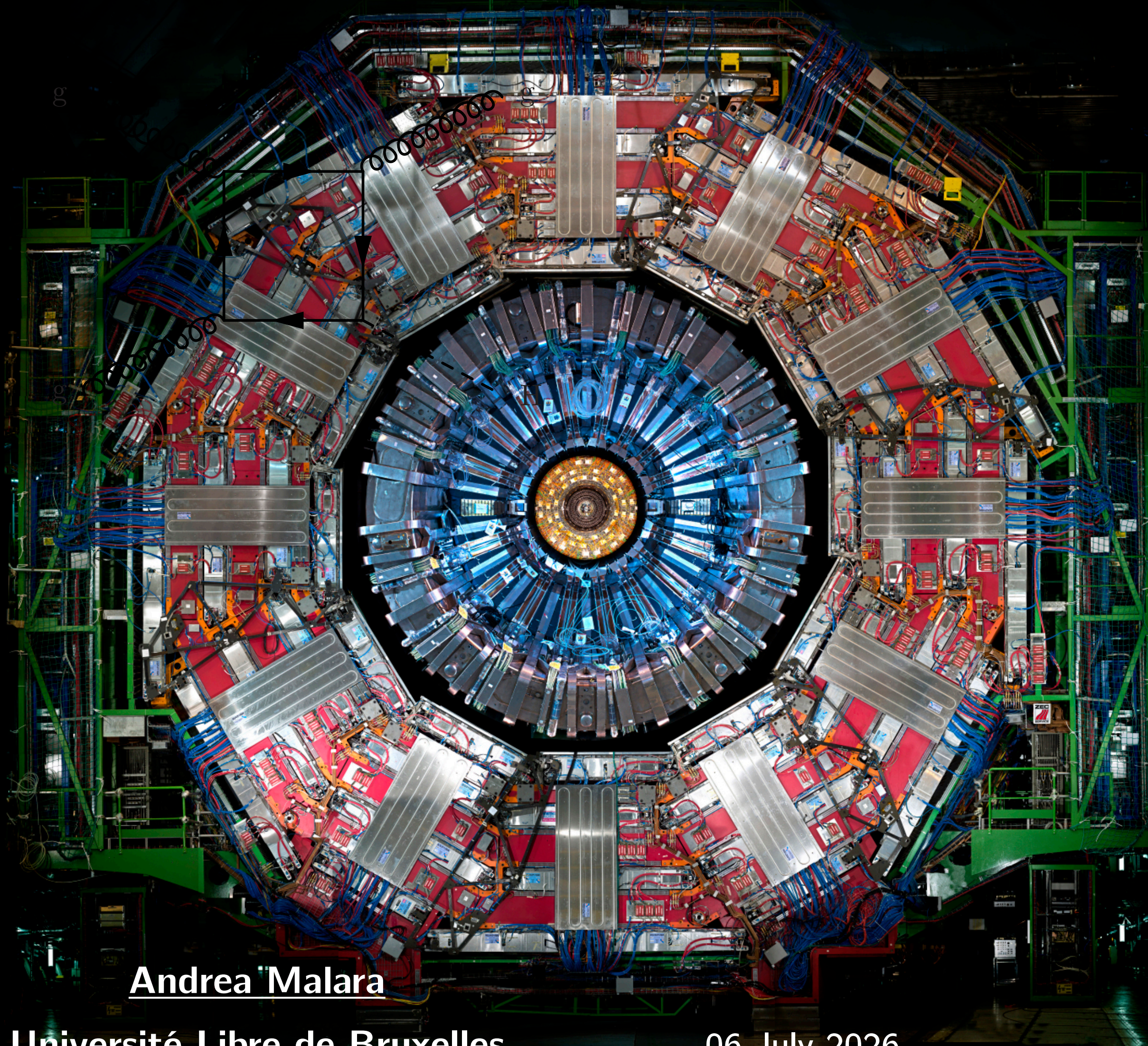


Search for Higgs to photon and dark photon



ULB



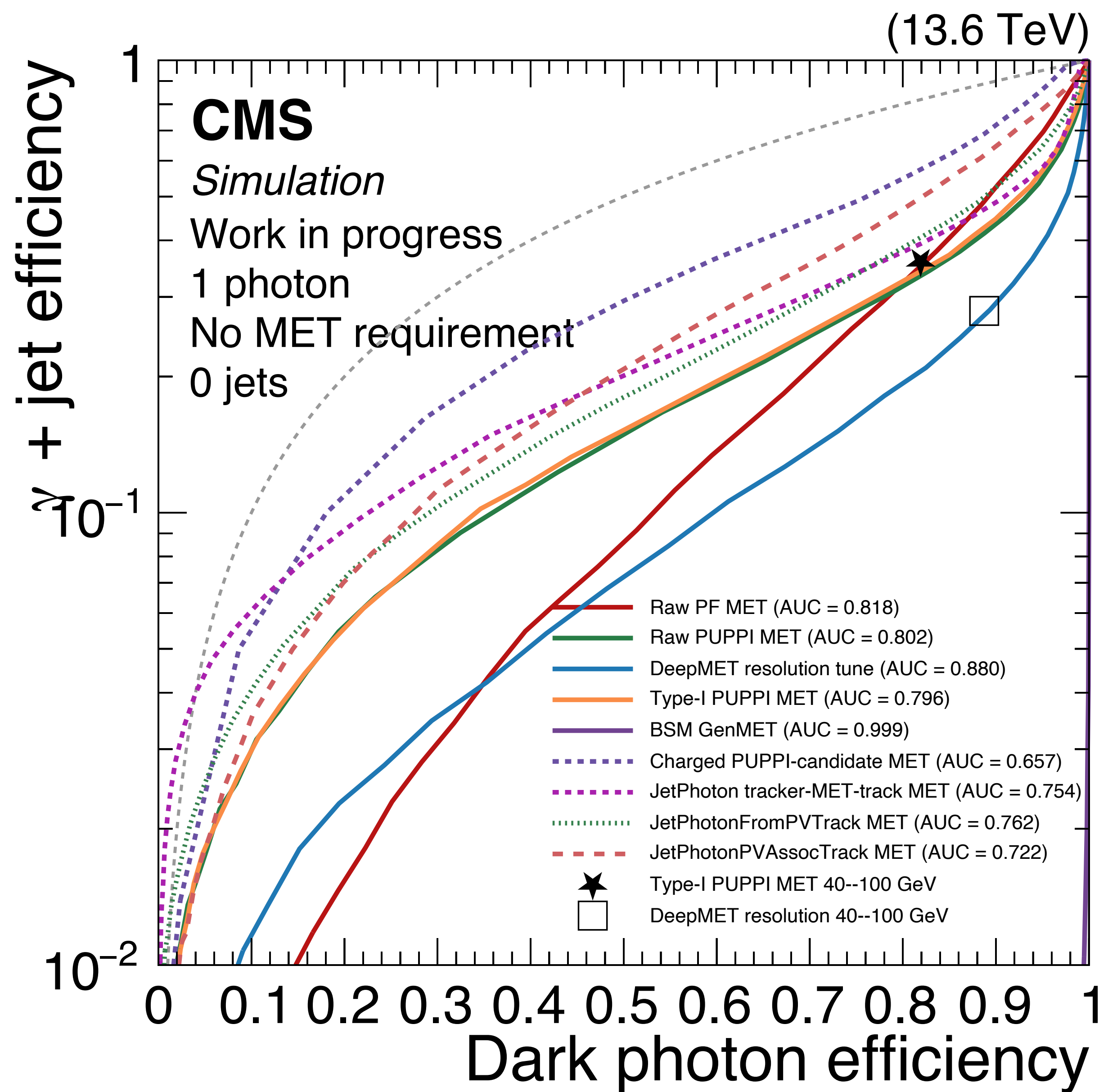
iihe
BRUXELLES BRUSSEL

Andrea Malara

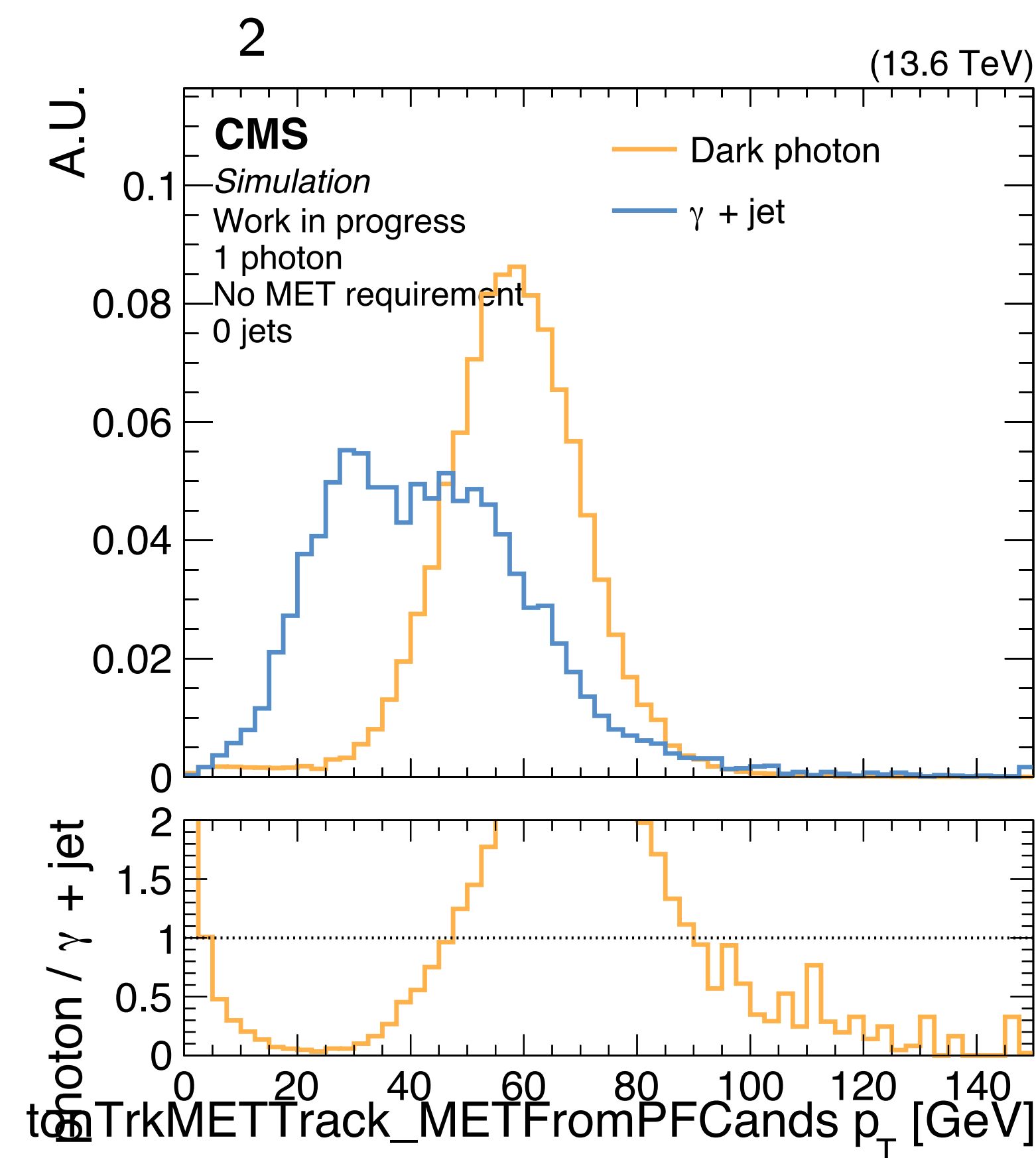
Université Libre de Bruxelles

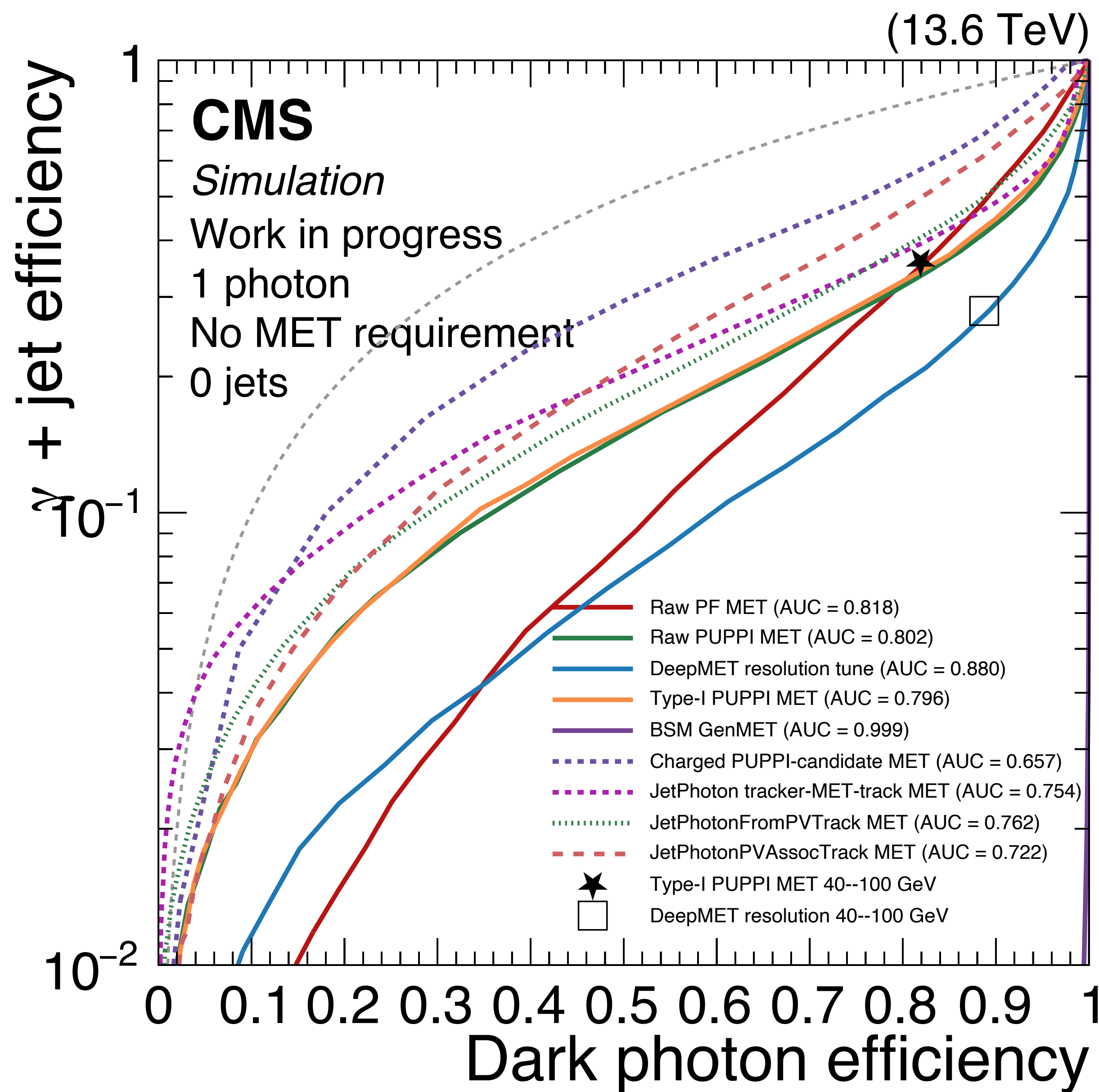
06 July 2026

H- $\rightarrow$ invisible

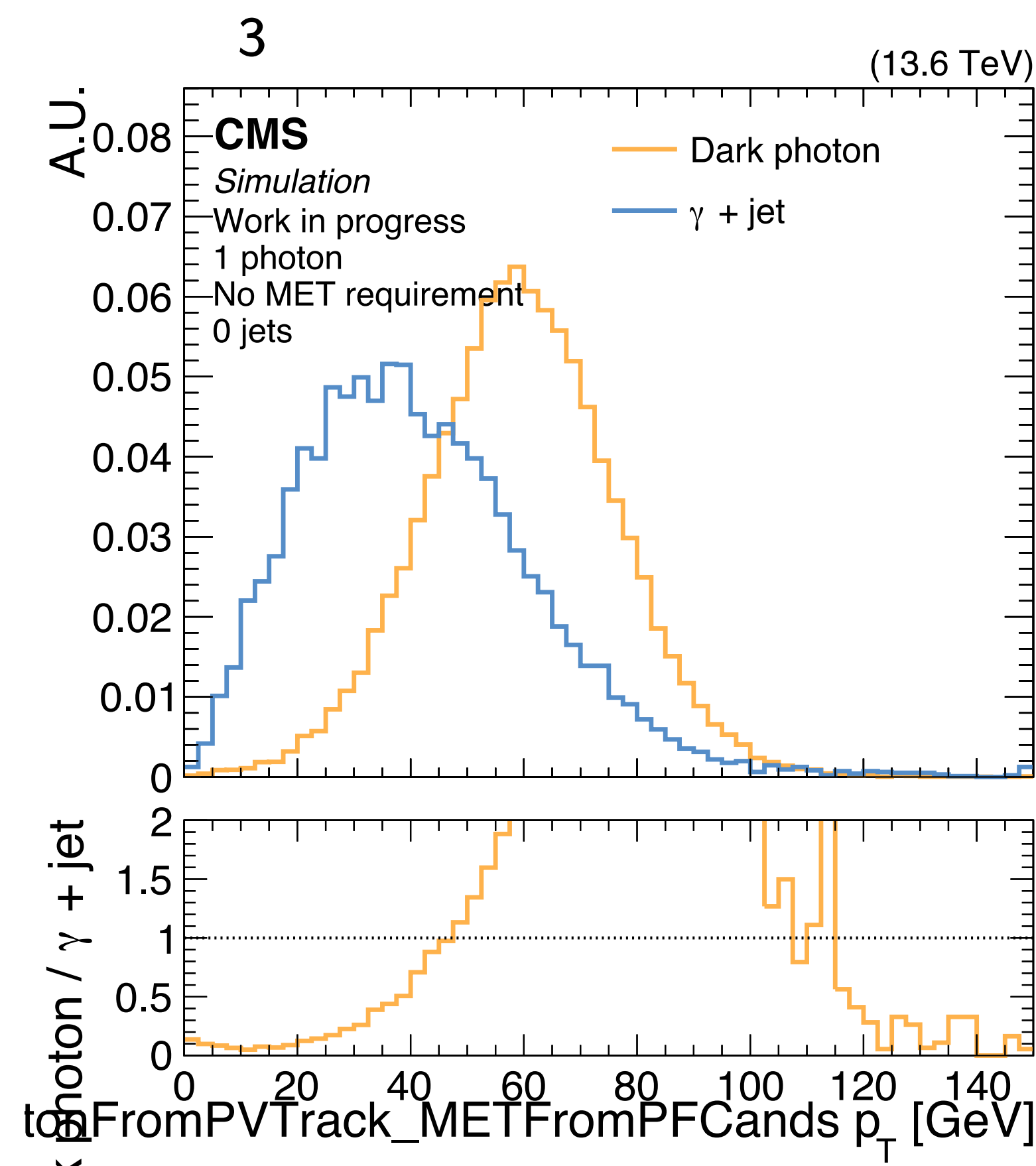


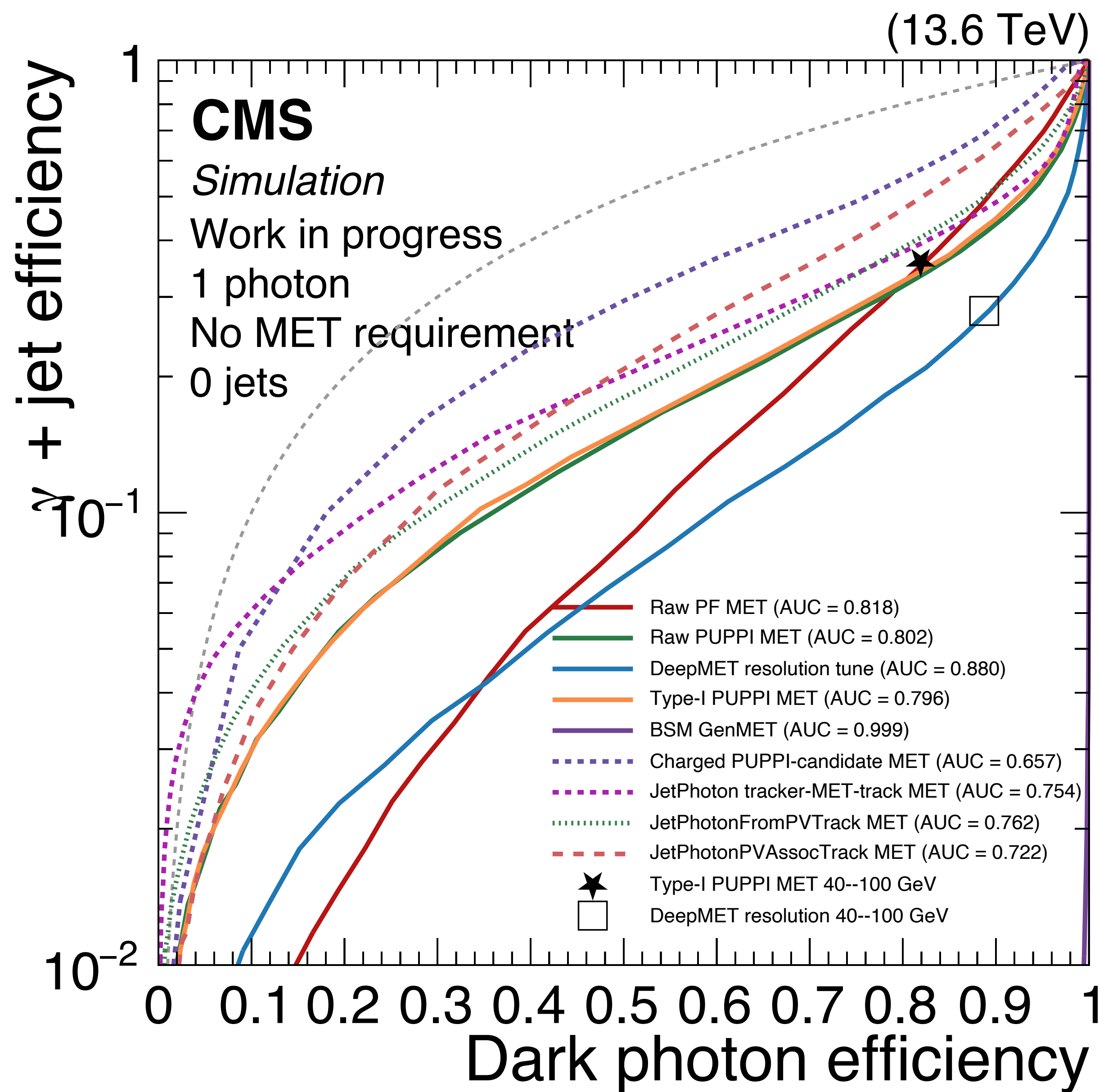
- 1) MET: all charged
 - 2) MET: 1) + TrackerMET def ($V_{xt} = 0$ + PV ass. Quality > 4)
 - 3) MET: 1) + From PV >= 1
 - 4) MET: 1) + PV ass. Quality > 1
- + photon + jet (0)



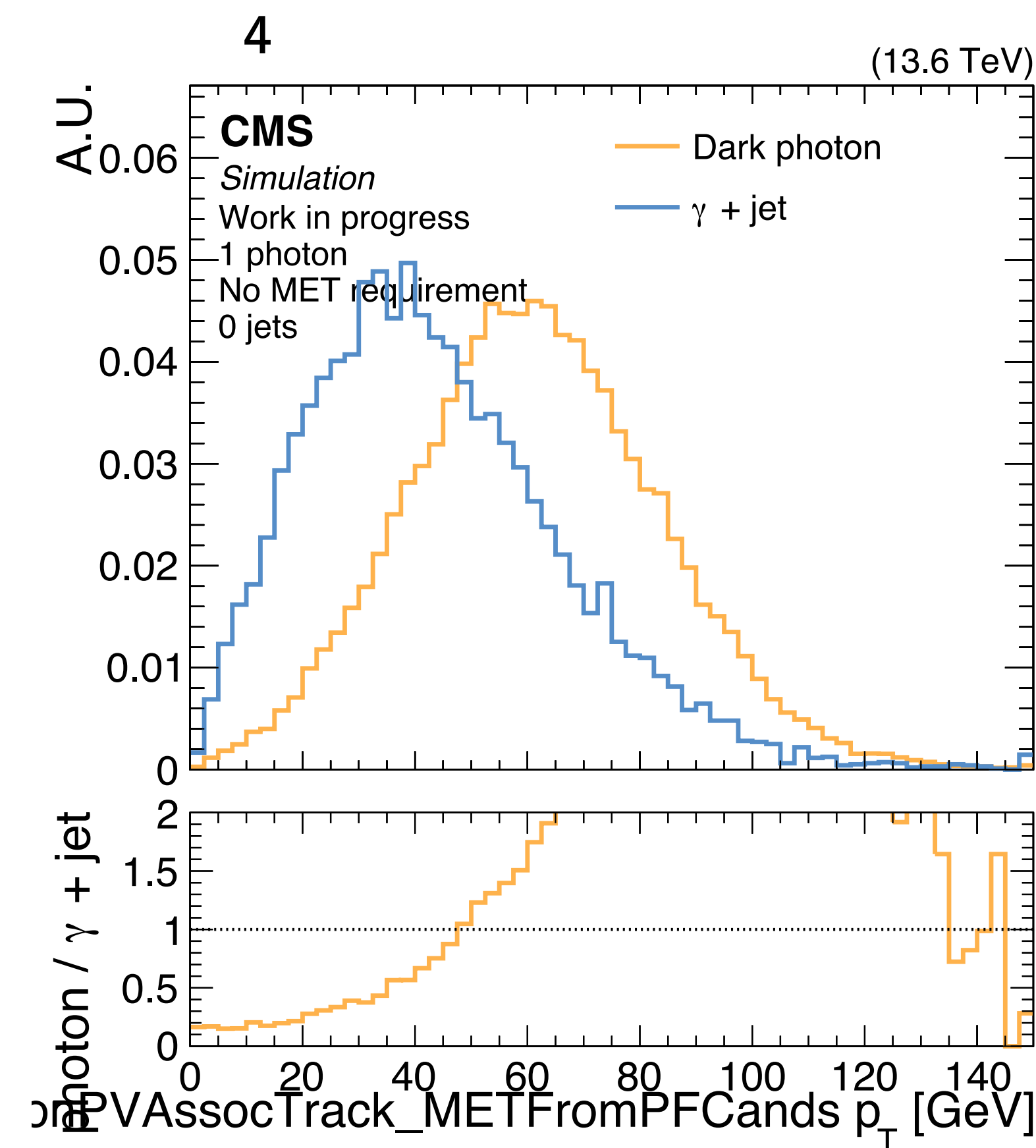


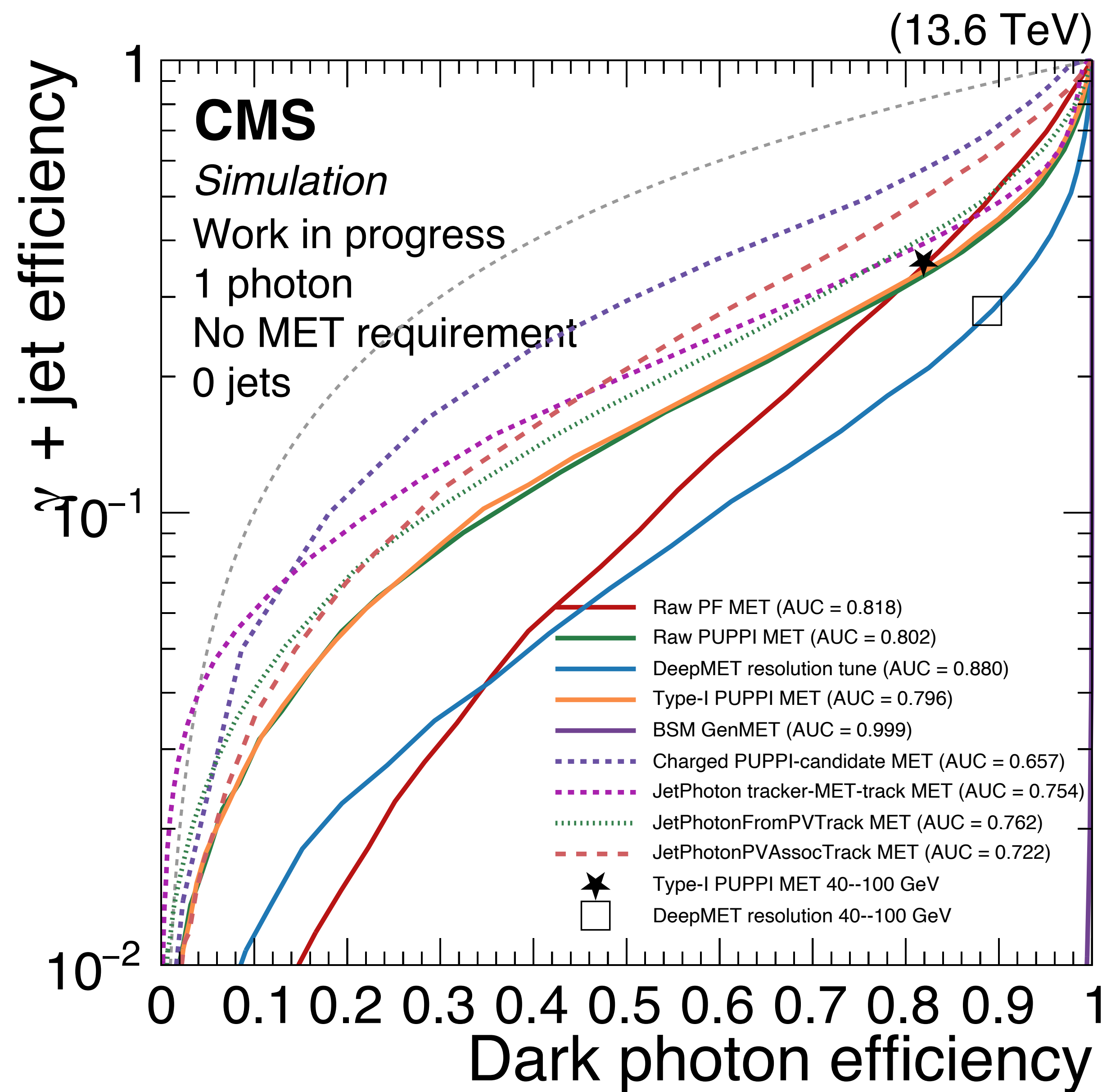
- 1) MET: all charged
 - 2) MET: 1) + TrackerMET def ($V_{xt} = 0$ + PV ass. Quality > 4)
 - 3) MET: 1) + From PV >= 1
 - 4) MET: 1) + PV ass. Quality > 1
- + photon + jet (0)



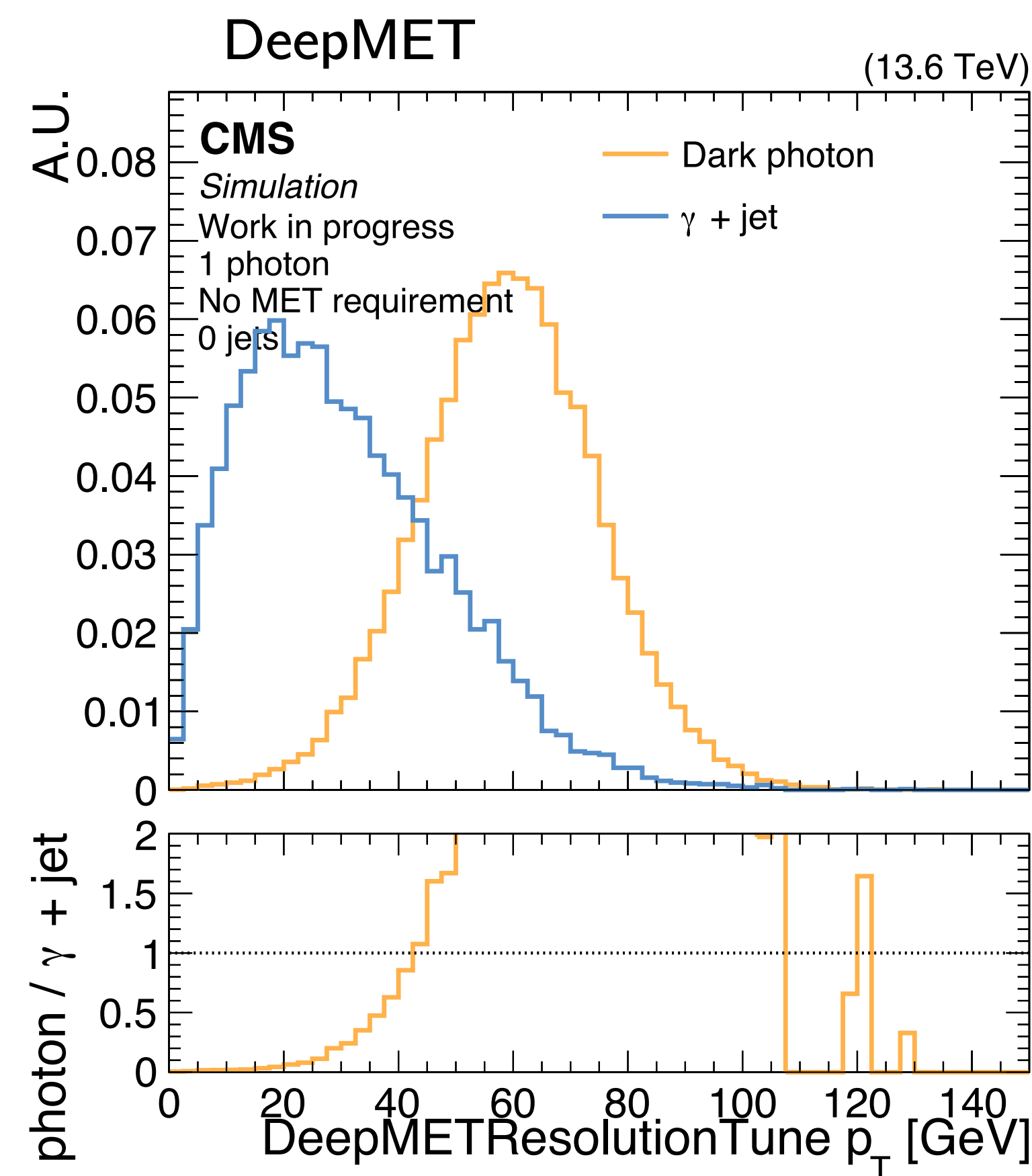


- 1) MET: all charged
 - 2) MET: 1) + TrackerMET def ($V_{xt} = 0$ + PV ass. Quality > 4)
 - 3) MET: 1) + From PV >= 1
 - 4) MET: 1) + PV ass. Quality > 1
- + photon + jet (0)



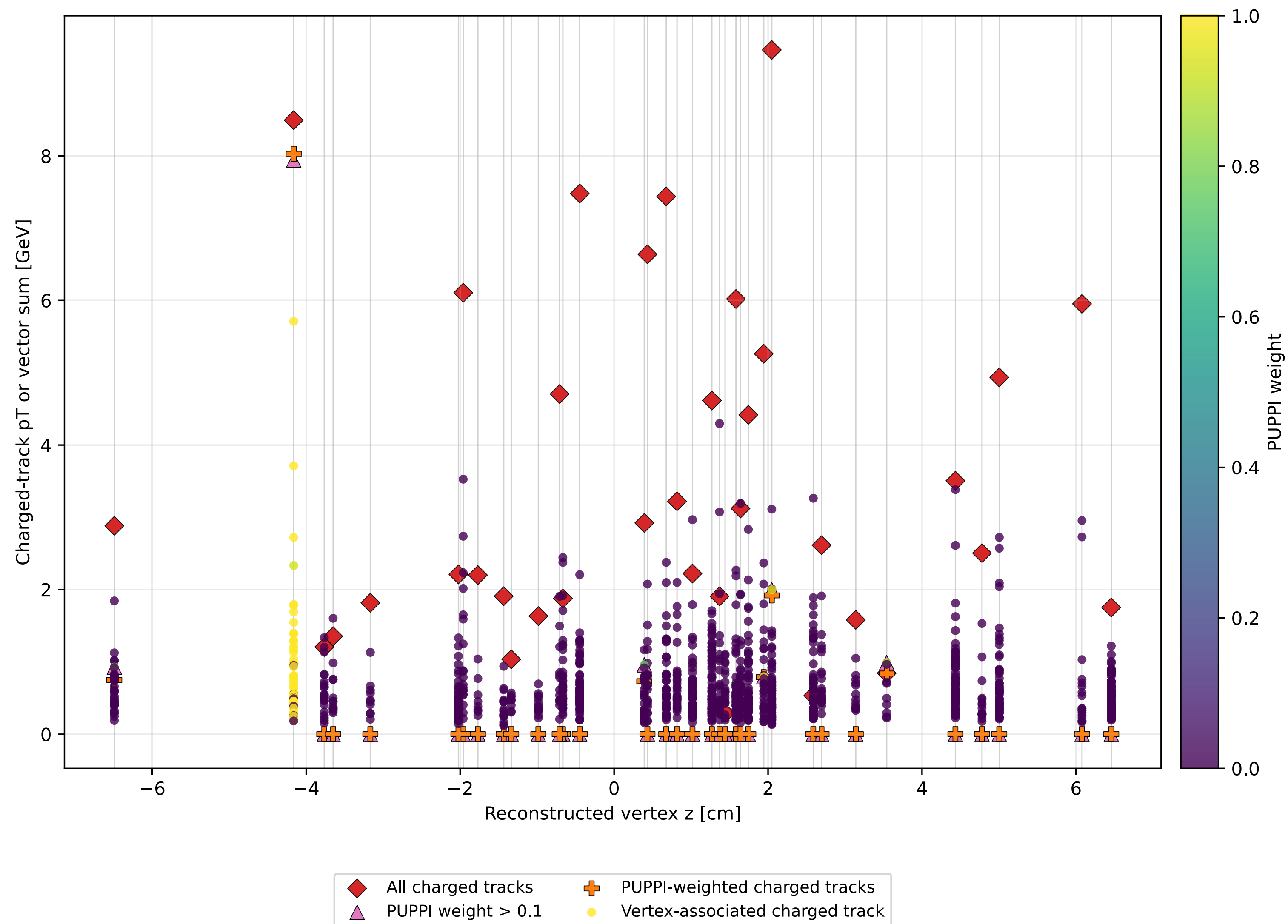


- 1) MET: all charged
 - 2) MET: 1) + TrackerMET def ($V_{xt} = 0$ + PV ass. Quality > 4)
 - 3) MET: 1) + From PV >= 1
 - 4) MET: 1) + PV ass. Quality > 1
- + photon + jet (0)

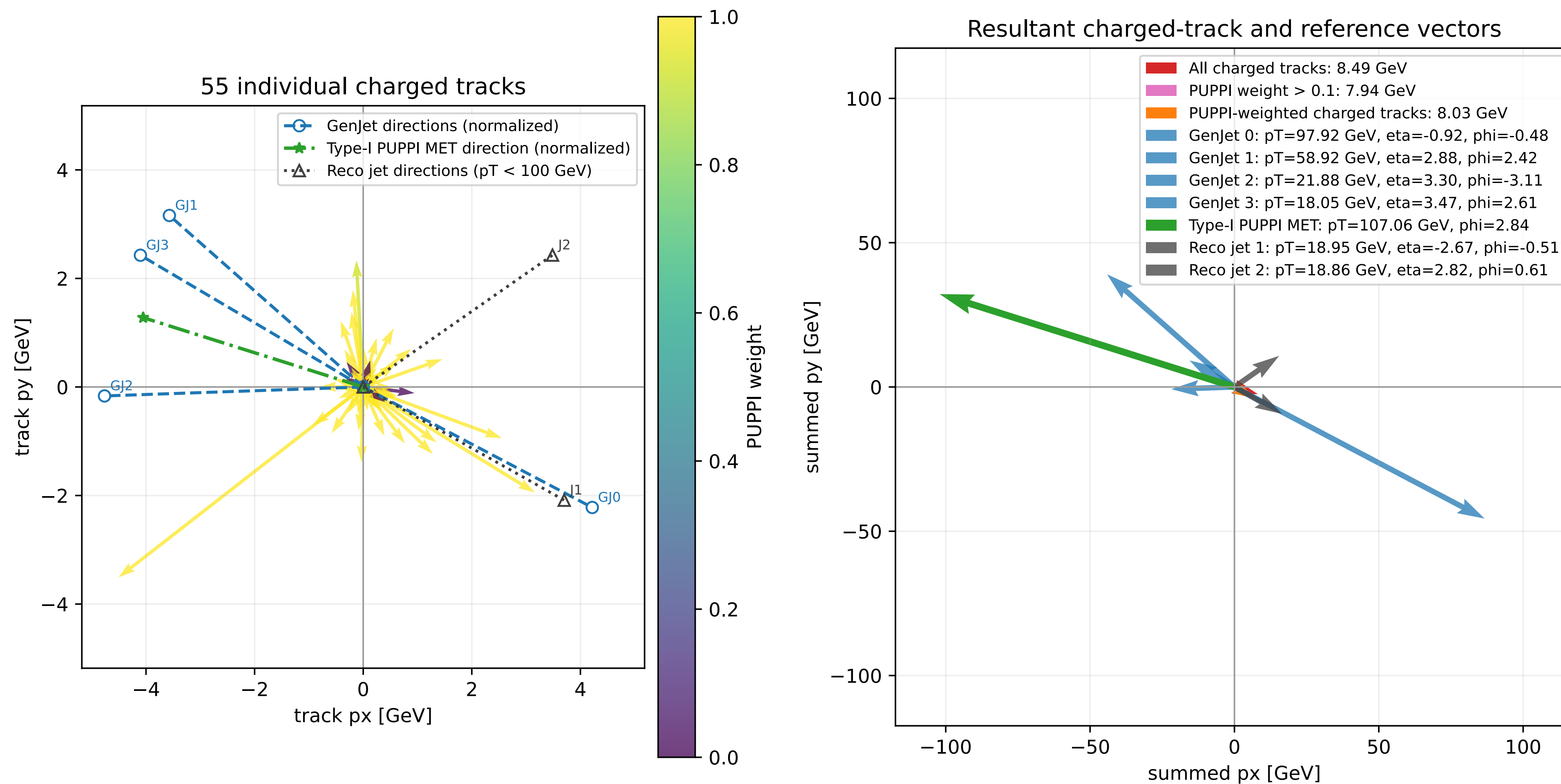


Per event investigation

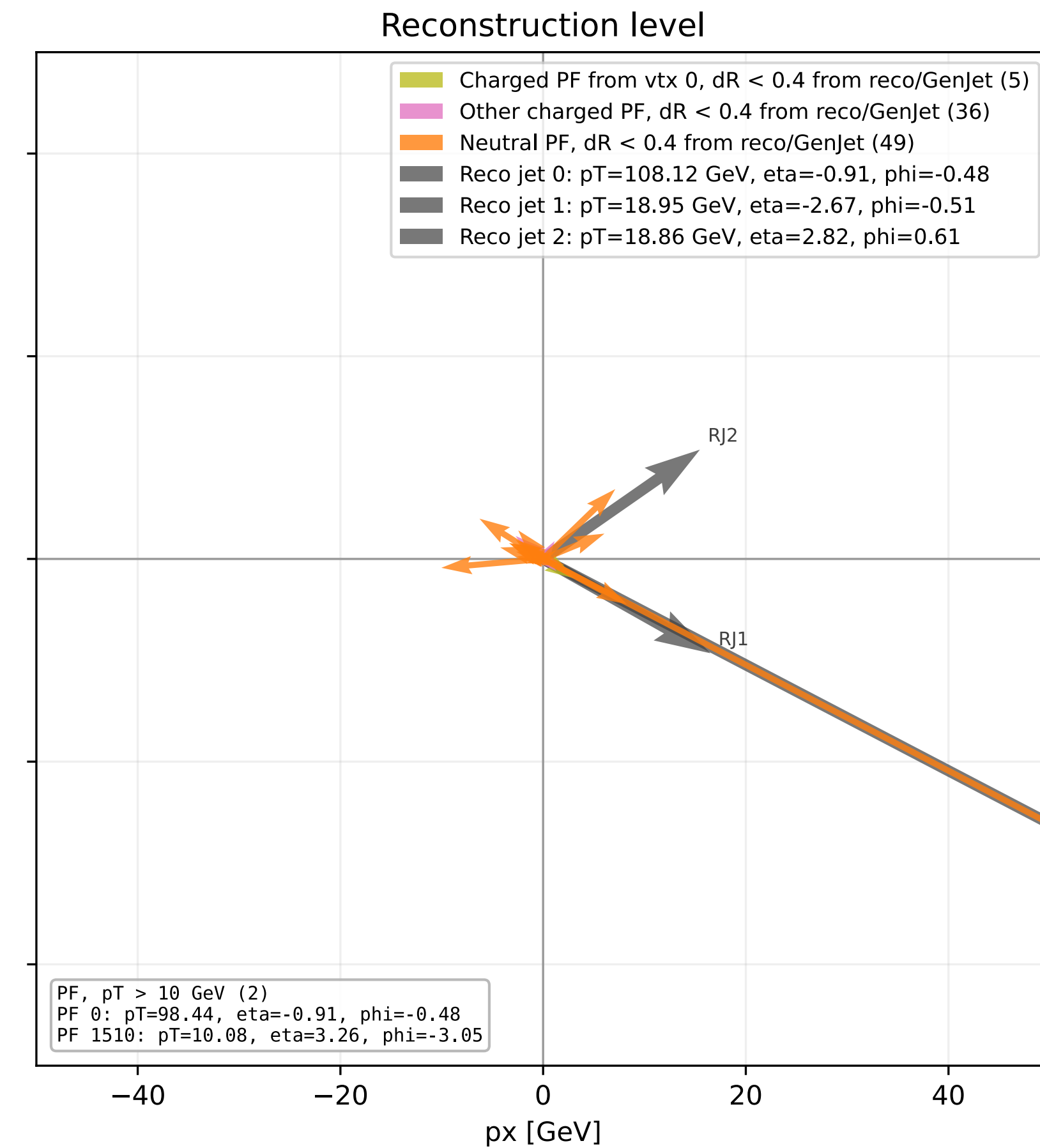
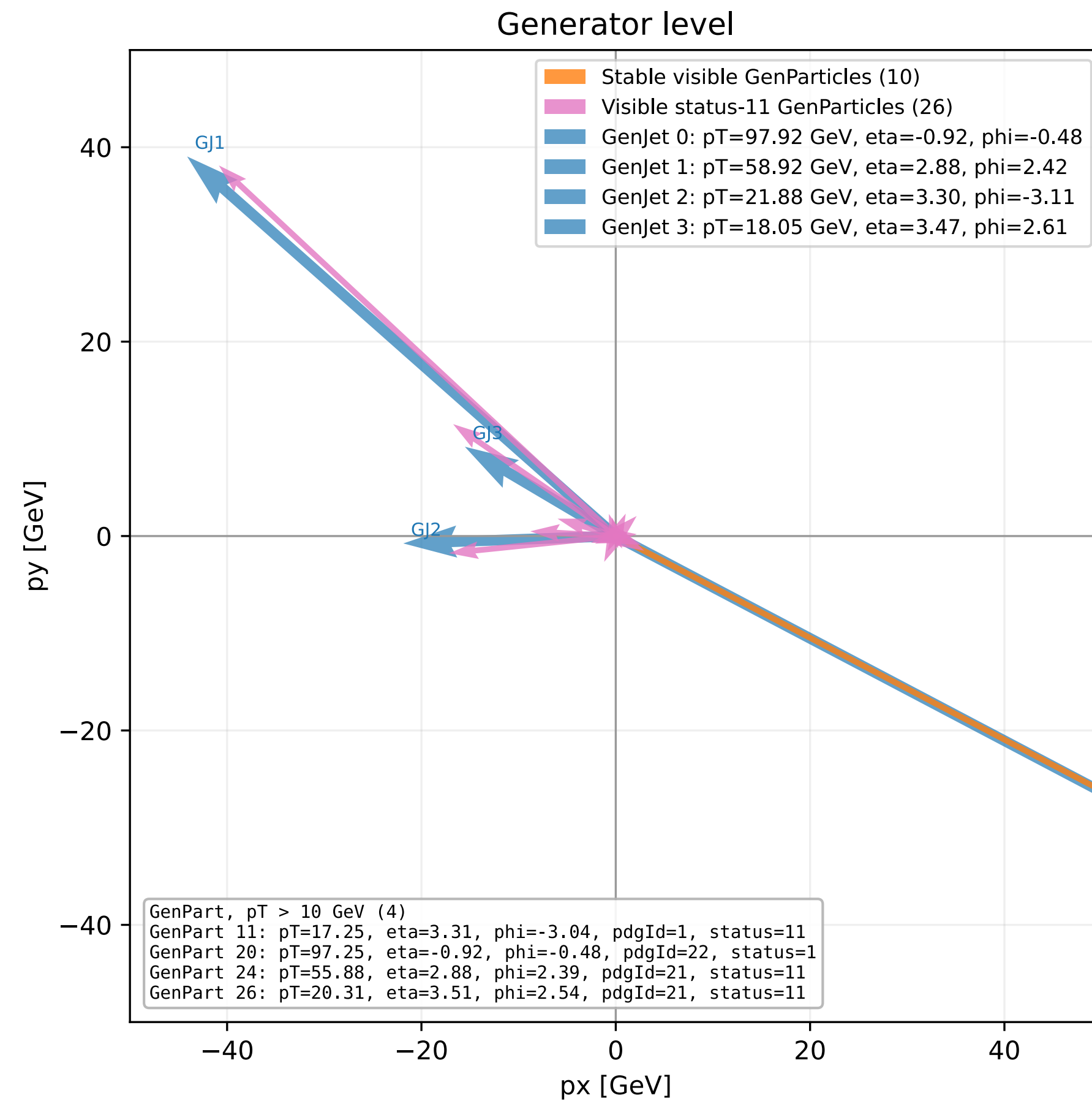
run 1, lumi 635779, event 474290787 | Raw PF MET = 26.2 GeV
cleaned_Charged_PFCands | GJ-4Jets-2NLO2LO_Bin-PTG-25_Par-BiasedPTG_TuneSherpaDef_13p6TeV_sherpaMEPS_aa5c40ba-269f-4651-8592-b39b645221b2_NANO.root



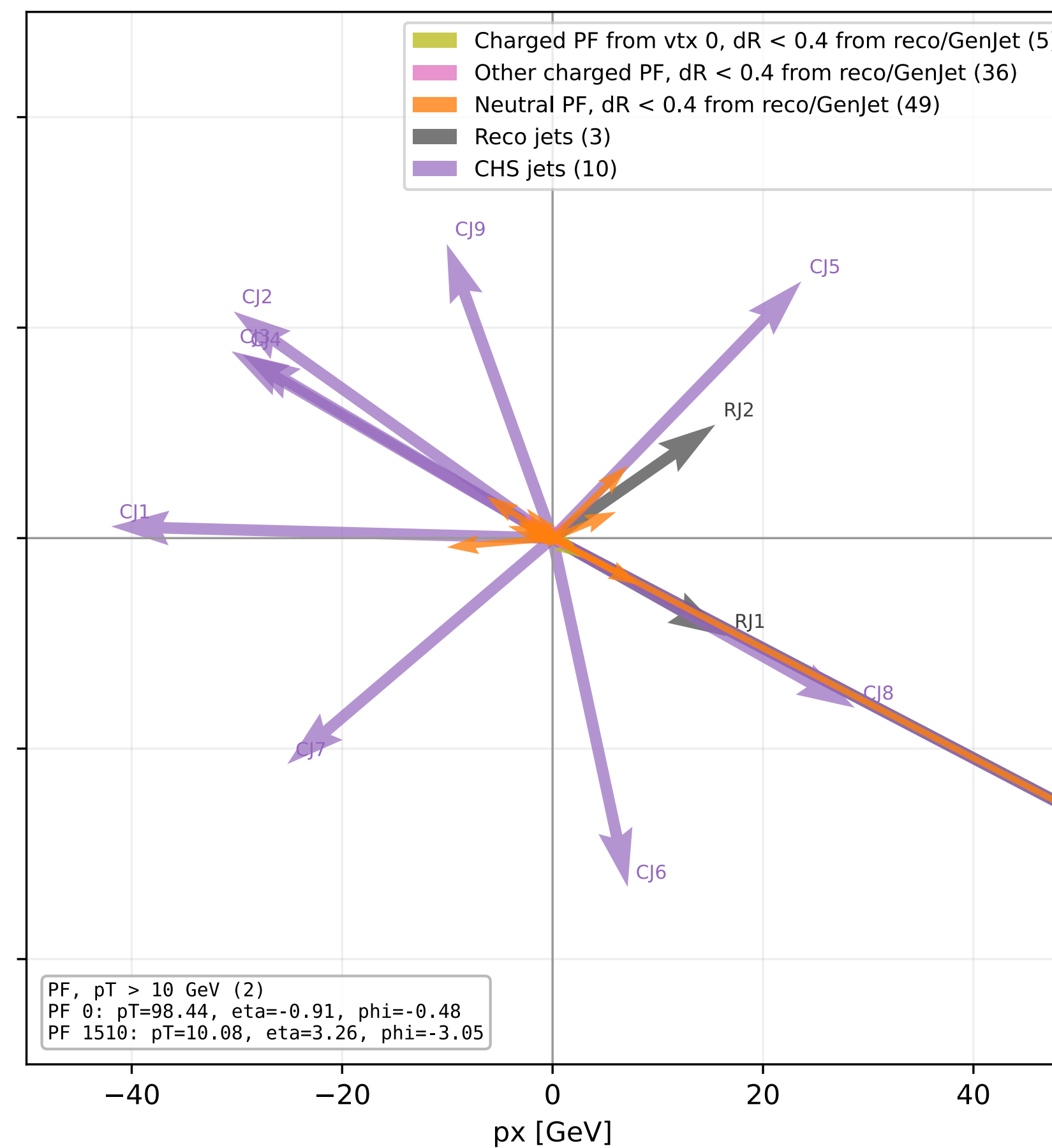
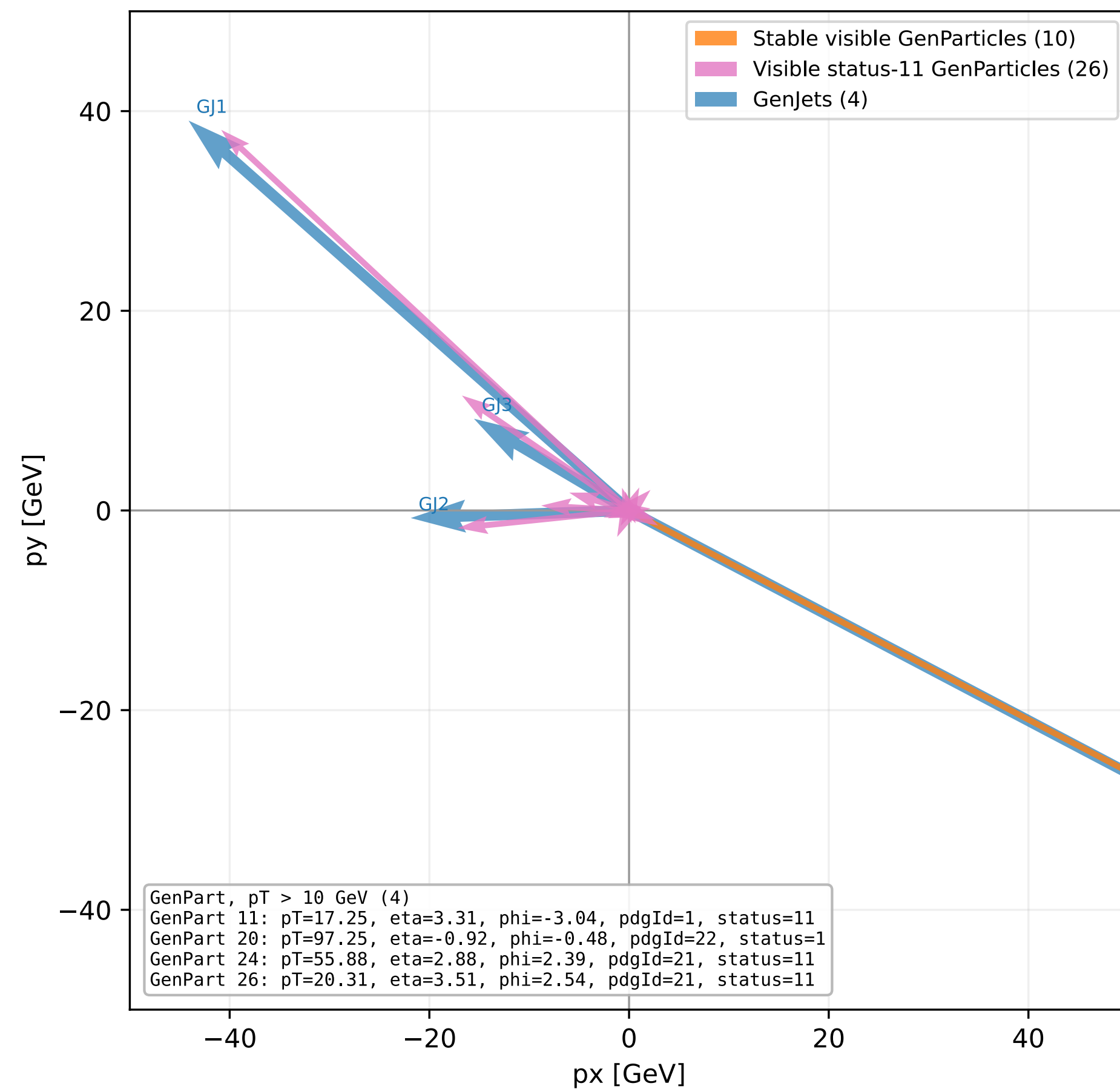
run 1, lumi 635779, event 474290787 | Raw PF MET = 26.2 GeV
cleaned_Charged_PFCands | GJ-4Jets-2NLO2LO_Bin-PTG-25_Par-BiasedPTG_TuneSherpaDef_13p6TeV_sherpaMEPS_aa5c40ba-269f-4651-8592-b39b645221b2_NANO.root
vertex 0, z = -4.162 cm



run 1, lumi 635779, event 474290787 | Raw PF MET = 26.2 GeV
 GenParticles/GenJets vs PF candidates/reco jets | GJ-4Jets-2NLO2LO_Bin-PTG-25_Par-BiasedPTG_TuneSherpaDef_13p6TeV_sherpaMEPS_aa5c40ba-269f-4651-8592-b39b645221b2_NANO.root



run 1, lumi 635779, event 474290787
Raw PF MET = 26.2 GeV | Raw PUPPI MET = 98.8 GeV | Type-I PUPPI MET = 107.1 GeV
GJ-4Jets-2NLO2LO_Bin-PTG-25_Par-BiasedPTG_TuneSherpaDef_13p6TeV_sherpaMEPS_aa5c40ba-269f-4651-8592-b39b645221b2_NANO.root
Generator level Reconstruction level



Jet kinematics

Jet	p_T [GeV]	η	ϕ
GJ0	97.92	-0.92	-0.48
GJ1	58.92	2.88	2.42
GJ2	21.88	3.30	-3.11
GJ3	18.05	3.47	2.61
RJ0	108.12	-0.91	-0.48
RJ1	18.95	-2.67	-0.51
RJ2	18.86	2.82	0.61
CJ0	112.19	-0.91	-0.48
CJ1	41.97	3.30	3.12
CJ2	37.19	2.85	2.52
CJ3	35.31	-3.30	2.61
CJ4	34.28	3.71	2.61
CJ5	33.97	3.00	0.80
CJ6	33.91	-2.74	-1.36
CJ7	33.12	-2.68	-2.44
CJ8	32.94	-2.69	-0.51
CJ9	29.72	2.94	1.92

~~~ **Additional Material** ~~~