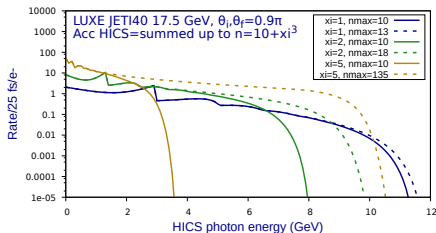
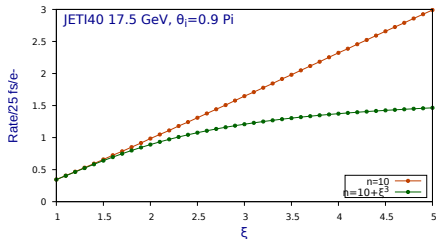


HICS rate summed over n laser photons

HICS rate, partial sum vs complete sum



Total HICS rate, partial vs full sum



- Previously HICS rate summed up to $n=10$
- (coded several years ago for another project with $\xi = 1$)
- For accuracy, sum to $n = 10 + \xi^3$
- Total HICS rate, $\sim 100\%$ larger at $\xi = 5$
- Differential rate: high energy photon tail previously missing
- Consequence: expect substantially more trident pairs
- Note: Observable Compton edges still in the same place
- This "fix" is in all the new "provisional" data sets

IPstrong v1.1.00 data sets, update 24/11/2020

- Mirroring all data with "provisional" sets, containing HICS fix
- HICS rate will be larger, there will be more trident positrons

Aug-Nov 2020 Data Runs, bunch/pulse crossings completed

Experiment Config	$w_0 = 3\mu\text{m}$	$3.5\mu\text{m}$	$4.0\mu\text{m}$	$4.5\mu\text{m}$	$5.0\mu\text{m}$	$6.5\mu\text{m}$	$8.0\mu\text{m}$	$10.0\mu\text{m}$	$13.0\mu\text{m}$	$15.0\mu\text{m}$	$20.0\mu\text{m}$	$50.0\mu\text{m}$	$100.0\mu\text{m}$
peak SQED ζ	5.12	4.44	3.88	3.45	3.1	2.39	1.94	1.553	1.195	1.04	0.78	0.31	0.15
peak SQED χ (16.5 GeV)	0.9	0.79	0.69	0.61	0.55	0.42	0.34	0.275	0.212	0.183	0.138	0.055	0.028
JET140 e-laser 16.5 GeV	10000	6000	5994	6000	6000		10000	1000	1000	1000	500	5000	500
JET140 e-laser 16.5 GeV (prov)	1000	1000	1000	1000	1000	1000	1000						
JET140 e-laser 17.5 GeV	1000	1000	1000	1000	1000		1000						
JET140 e-laser 17.5 GeV (prov)	1000	1000	1000	1000	1000	1000	1000						
JET140 g-laser 16.5 GeV	5000	2000	2000	2000	2000	2000	2000						
JET140 g-laser 17.5 GeV													
JET140 ics-laser 16.5 GeV													
JET140 ics-laser 17.5 GeV													
JET140 misalignments													
	pulse shape	$w_0 = 3.0\mu\text{m}$	$w_0 = 4.0\mu\text{m}$	$w_0 = 5.0\mu\text{m}$	$w_0 = 6.0\mu\text{m}$	$w_0 = 7.0\mu\text{m}$	$w_0 = 8.0\mu\text{m}$	$w_0 = 9.0\mu\text{m}$	$w_0 = 10.0\mu\text{m}$	$w_0 = 11.0\mu\text{m}$	$w_0 = 12.0\mu\text{m}$	$w_0 = 16.0\mu\text{m}$	$w_0 = 20.0\mu\text{m}$
peak SQED ζ	gauss	16.7	12.53	10.03	8.35	7.16	6.27	5.57	5.01	4.56	4.18	3.133	2.506
peak SQED χ (16.5 GeV)	gauss	2.96	2.22	1.78	1.48	1.27	1.11	0.99	0.89	0.81	0.74		
phasell e-laser 16.5 GeV	gauss	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		
phasell e-laser 16.5 GeV (prov)	gauss	500	500	500	500	500	500	500	500	500	500	500	500
phasell e-laser 17.5 GeV	gauss	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		
phasell g-laser 16.5 GeV	gauss	2000	1000	1000	1000	1000	1000	2000	2000	2000	2000		
phasell g-laser 16.5 GeV (prov)	gauss	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
phasell g-laser 17.5 GeV													
phasell OPPP ideal 8.0 GeV	flat	100	100	100	100	100	100		100		100	100	100
phasell OPPP ideal 8.0 GeV	gauss	100	100	100	100	100	100		100		100	100	100
phasell ics-laser 16.5 GeV							1000						
phasell ics-laser 17.5 GeV													
phasell misalignments													

[/afs/desy.de/user/h/hartin/public/IPstrong_V1.1.00](https://afs.desy.de/user/h/hartin/public/IPstrong_V1.1.00)