

# CEPC

Jets, samples and Wednesday working meeting

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# Cefs hardware issue



- Last 2 weeks cefs stuck;
  - High IO challenge. HBA card issue
  - Expect to solve this week.

# Sample List

- Generally most samples are ready now.

ECM	Z process	H process	Path	CEPCSW Release	EvtNumber	Sim+Digi+Trk	Rec	Status
240	mm	bb	/cefs/higgs/zhangkl/Production/25035/E240_mmHbb	25.3.5	500k	D	D	D
240	mm	cc	/cefs/higgs/zhangkl/Production/25035/E240_mmHcc	25.3.5	500k	D	D	D
240	mm	tautau	/cefs/higgs/zhangkl/Production/25035/E240_mmHe3e3	25.3.5	500k	D	D	D
240	mm	ww(fullhad)	/cefs/higgs/zhangkl/Production/25035/E240_mmHww	25.3.5	500k	D	D	D
240	mm	zz(fullhad)	/cefs/higgs/zhangkl/Production/25035/E240_mmHzz	25.3.5	500k	D	D	D
240	mm	gg	/cefs/higgs/zhangkl/Production/25035/E240_mmHgg	25.3.5	500k	D	D	D
240	mm	ss	/cefs/higgs/zhangkl/Production/25035/E240_mmHss	25.3.6	500k	D	D	D
91.2	bb		/cefs/higgs/zhangkl/Production/25035/E91.2_eebb	25.3.6	100k	D		
91.2	cc		/cefs/higgs/zhangkl/Production/25035/E91.2_eecc	25.3.6	100k	D		
91.2	dd		/cefs/higgs/zhangkl/Production/25035/E91.2_eedd	25.3.6	100k	D		
91.2	uu		/cefs/higgs/zhangkl/Production/25035/E91.2_eeuu	25.3.6	100k	D		
91.2	ss		/cefs/higgs/zhangkl/Production/25036/E91.2_eess	25.3.6	100k	D		
240	ee	inclusive	/cefs/higgs/zhangkl/Production/25036/E240_eeHX	25.3.6	1M	D	D	
240	mm	inclusive	/cefs/higgs/zhangkl/Production/25036/E240_mmHX	25.3.6	1M	D	D	
240	qq	inclusive	/cefs/higgs/zhangkl/Production/25036/E240_qqHX	25.3.6	3M	D	D	
240	vv	inclusive	/cefs/higgs/zhangkl/Production/25036/E240_vvHX	25.3.6	1M	D	D	
240	tautau	inclusive	/cefs/higgs/zhangkl/Production/25036/E240_tautauHX	25.3.6	1M	D	D	
240 2f	ee		/cefs/higgs/zhangkl/Production/25036/E240_e1e1	25.3.6	100k	D	D	
	mm		/cefs/higgs/zhangkl/Production/25036/E240_e2e2	25.3.6	100k	D	D	
	tautau		/cefs/higgs/zhangkl/Production/25036/E240_e3e3	25.3.6	100k	D	D	
	qq		/cefs/higgs/zhangkl/Production/25036/E240_qq	25.3.6	500k	D	D	
341 ttbar	semi-lep			25.3.6	100k			
342.75 ttbar	semi-lep			25.3.6	600k			
344 ttbar	semi-lep			25.3.6	200k			
346 ttbar	semi-lep			25.3.6	100k			
91.2	bb		/cefs/higgs/zhangkl/Production/25036/E91.2_eebb	25.3.6	2M	D	D	
91.2	dd		/cefs/higgs/zhangkl/Production/25036/E91.2_eedd	25.3.6	2M	D	D	
91.2	uu		/cefs/higgs/zhangkl/Production/25036/E91.2_eeuu	25.3.6	2M	D	D	
80	ee->bb(withoutISR)		/cefs/higgs/zhangkl/Production/25036/E80_eebb_woisr	25.3.6	100k	D	D	
120	ee->bb(withoutISR)		/cefs/higgs/zhangkl/Production/25036/E120_eebb_woisr	25.3.6	100k	D	D	
160	ee->bb(withoutISR)		/cefs/higgs/zhangkl/Production/25036/E160_eebb_woisr	25.3.6	100k	D	D	
200	ee->bb(withoutISR)		/cefs/higgs/zhangkl/Production/25036/E200_eebb_woisr	25.3.6	100k	D	D	
240	ee->bb(withoutISR)		/cefs/higgs/zhangkl/Production/25036/E240_eebb_woisr	25.3.6	500k	D	D	
240 H124.8	mm	inclusive		25.3.7	15k	D	D	
H124.95	mm	inclusive		25.3.7	15k	D	D	
H125.05	mm	inclusive		25.3.7	15k	D	D	
H125.2	mm	inclusive		25.3.7	15k	D	D	

240 4f	zz_H0tut		/cefs/higgs/zhangkl/Production/25036/4fermions	25.3.6	400k	D		
	zz_H0dtt			25.3.6		D		
	zz_H0uu_nottd			25.3.6		D		
	zz_H0cc_nottd			25.3.6		D		
	ww_H0cuux			25.3.6		D		
	ww_H0aubd			25.3.6		D		
	ww_H0usud			25.3.6		D		
	ww_H0ccbs			25.3.6		D		
	ww_H0ccds			25.3.6		D		
	zzorww_H0usud			25.3.6		D		
	zzorww_H0ccscs			25.3.6		D		
	zz_sl0mu_up			25.3.6		D		
	zz_sl0tau_down			25.3.6		D		
	zz_sl0mu_down			25.3.6		D		D
	zz_sl0nu_down			25.3.6		D		
	zz_sl0tau_up			25.3.6		D		
	zz_sl0mu_up			25.3.6		D		D
	ww_sl0tauq			25.3.6		D		
	ww_sl0muq			25.3.6		D		D
	zz_sl04tau			25.3.6		D		
	zz_sl04mu			25.3.6		D		D
	zz_sl0taumu			25.3.6		D		
	zz_sl0mumu			25.3.6		D		D
	zz_sl0tautau			25.3.6		D		
	ww_sl0l			25.3.6		D		D
	zzorww_sl0mumu			25.3.6		D		
	zzorww_sl0tautau			25.3.6		D		
	sze_sl0tau			25.3.6		D		
	sze_sl0mu			25.3.6		D		
	sze_sl0e			25.3.6		D		
	sze_sl0dd			25.3.6		D		
	sze_sl0uu			25.3.6		D		
	sze_sl0nuu			25.3.6		D		
	sw_sl0qq			25.3.6		D		
	sw_sl0tau			25.3.6		D		
	sw_sl0mu			25.3.6		D		
	sznu_sl0mumu			25.3.6		D		
	sznu_sl0tautau			25.3.6		D		
	sznu_sl0nuu_up			25.3.6		D		D
	sznu_sl0nuu_down			25.3.6		D		
240	vv	bb	/cefs/higgs/zhangkl/Production/25037/joi	25.3.7	1M	D	D	
	vv	cc	/cefs/higgs/zhangkl/Production/25037/joi	25.3.7	1M	D	D	
	vv	gg	/cefs/higgs/zhangkl/Production/25037/joi	25.3.7	1M	D	D	
	vv	uu	/cefs/higgs/zhangkl/Production/25037/joi	25.3.7	1M	D	D	
	vv	ss	/cefs/higgs/zhangkl/Production/25037/joi	25.3.7	1M	D	D	
	vv	dd	/cefs/higgs/zhangkl/Production/25037/joi	25.3.7	1M	D	D	

Sample name convention, cross section:

<https://docs.ihep.ac.cn/link/AA749814584F654E8FBAADA4D766223B1F>

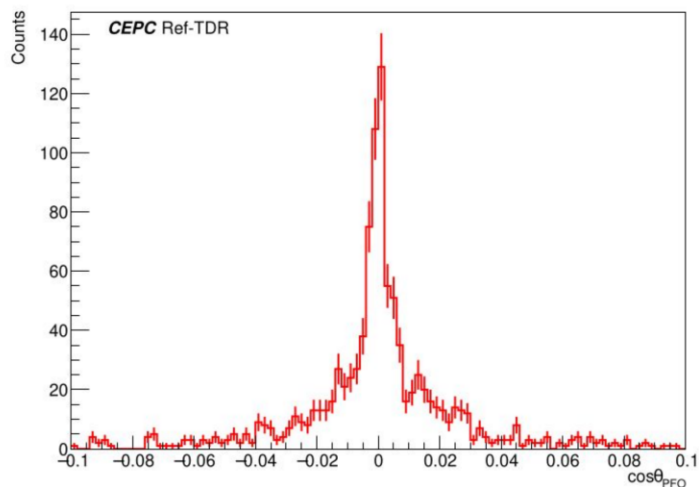
<https://docs.ihep.ac.cn/link/AR7D1FA68DEEB54F6782D63CF312B747C1>

# $A_{FB}$ : Assemetry $Z \rightarrow \mu\mu$

@Jiawei, Shuo



- 增加了  $|\text{costheta\_CM}| > 0.05$  cut, 把forward-backward 误判的误差从 $5e-5$ 降低到 $2e-6$



原本1029个误判事例的  
 $\text{costheta\_CM}$ 分布

$|\text{costheta\_CM}| > 0.05$ , 之  
后, 仅剩53个误判事例

## Todo list

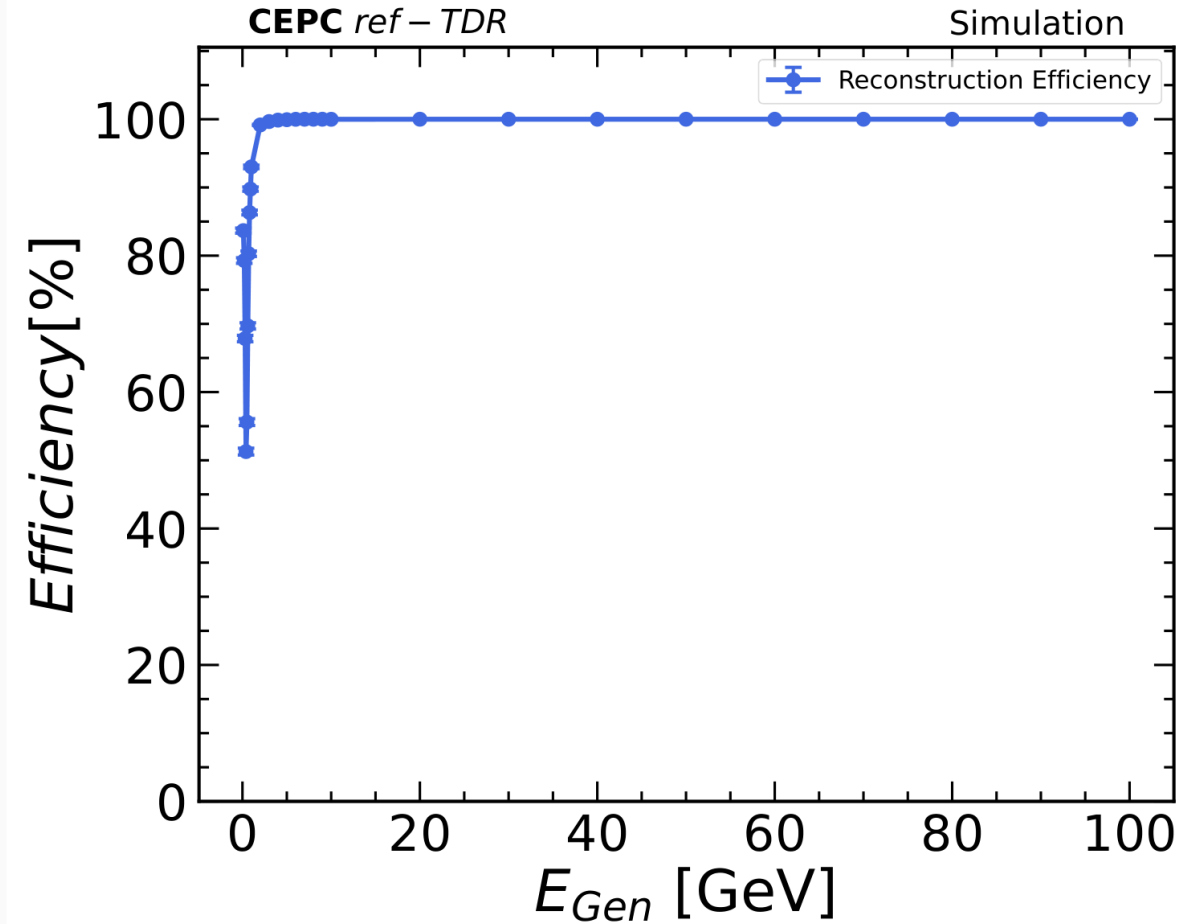
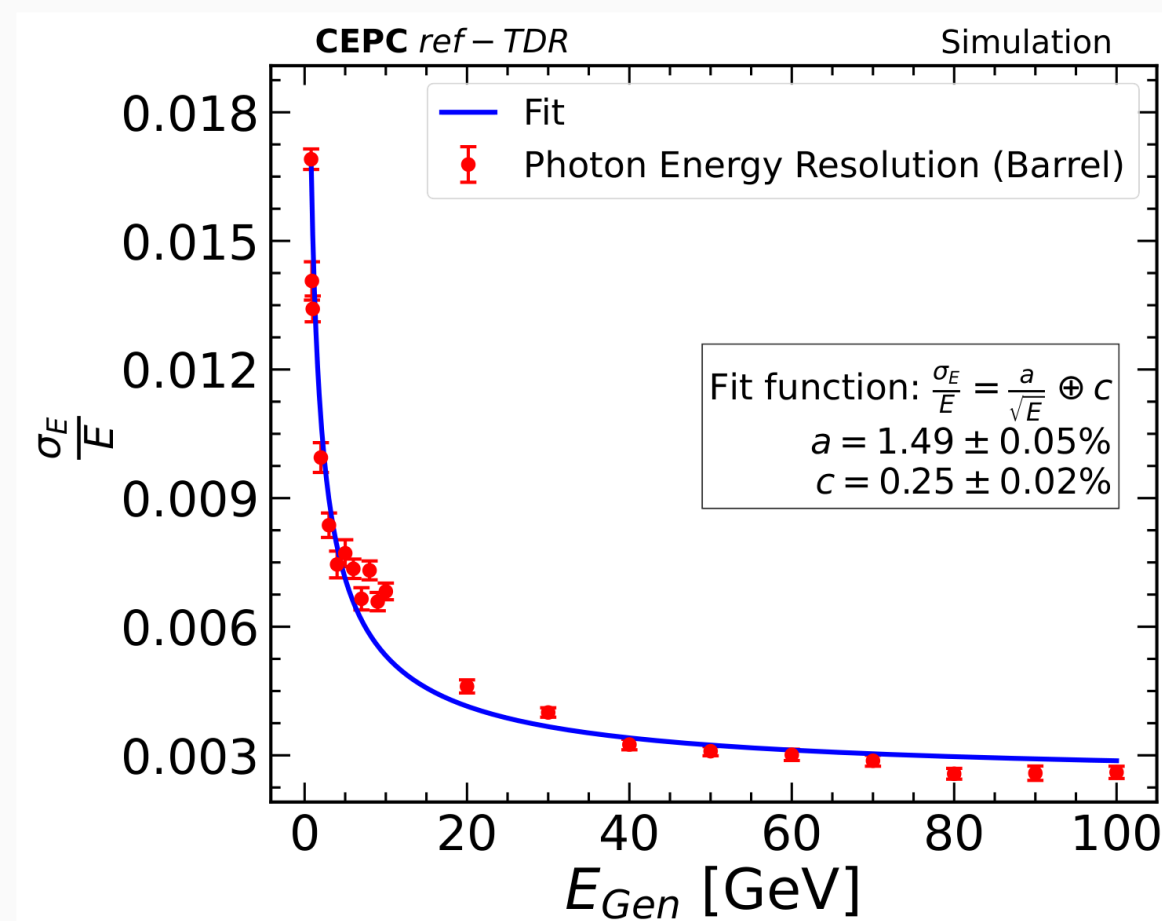
- Some minor corrections due to the inconsistency in workflow: no change on conclusions
- Including muon detector hits in muon ID
  - Samples are ready, expect fewer mis-ID events, will update the results
- Check the contamination of  $Z \rightarrow ee$ 
  - Should be lower than  $Z \rightarrow \text{tautau}$  and no impact on conclusion, will check
- Re-optimize selections
  - Now the selection eff is  $\sim 80\%$ , need to be improved

# Photons

@Reda

Photon id, H to diphoton analysis under preparing.

Photon eff  $\sim 100\%$  due to excluding the converted photons.  
Will change the definition next time.



# TDR Physics and Performance

- <https://latex.ihep.ac.cn/project/668baad1fac5797081d0ee3f>

[d1fac5797081d0ee3f](https://latex.ihep.ac.cn/project/668baad1fac5797081d0ee3f)

- Merged to upstream and submit to committee last week.

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