Systematic

- Correction

sample		N_{weight}(SPS)	N_{weight}(DPS)	N_{weight}(Mix)
SPS	Corrected by Acc.	148980	153623	151509
	Pass Acc. cuts		50459	
	Corrected by Eff.	13880	10639	12409
	Pass Eff. cuts		8160	
DPS	Corrected by Acc.	80	80	79
	Pass Acc. cuts		15	
	Corrected by Eff.	2300	1883	2149
	All cuts		1257	

- $153623 \times 10639 / 50459 = 32391$
- $151509 \times 12409 / 50459 = 37259$
- $37259 - 32391 / 37259 = 13.1\%$

Systematic

- Fitter validation

Components			1	2	3	4	5
Sample	$J/\psi_1 J/\psi_2$	SPS+DPS	1000+500	2000+500	1000+1000	2000+1000	1000+500
		P+NP	500	500	500	500	1000
		B decay	2000	2000	2000	2000	2000
	$J/\psi\mu^+\mu^-$		1000	1000	1000	1000	1000
	$\mu^+\mu^-\mu^+\mu^-$		100	100	100	100	100
Fitting	$J/\psi_1 J/\psi_2$	P+P	1430±40	2430±50	1880±50	2880±60	1480±50
		P+NP	530±30	520±30	540±30	540±30	1020±30
		NP+NP	1960±60	1960±60	1960±60	1960±60	1980±70
	$J/\psi\mu^+\mu^-$		1030±40	1040±30	1030±40	1040±30	1000±40
	$\mu^+\mu^-\mu^+\mu^-$		100±20	100±20	100±20	100±20	100±20

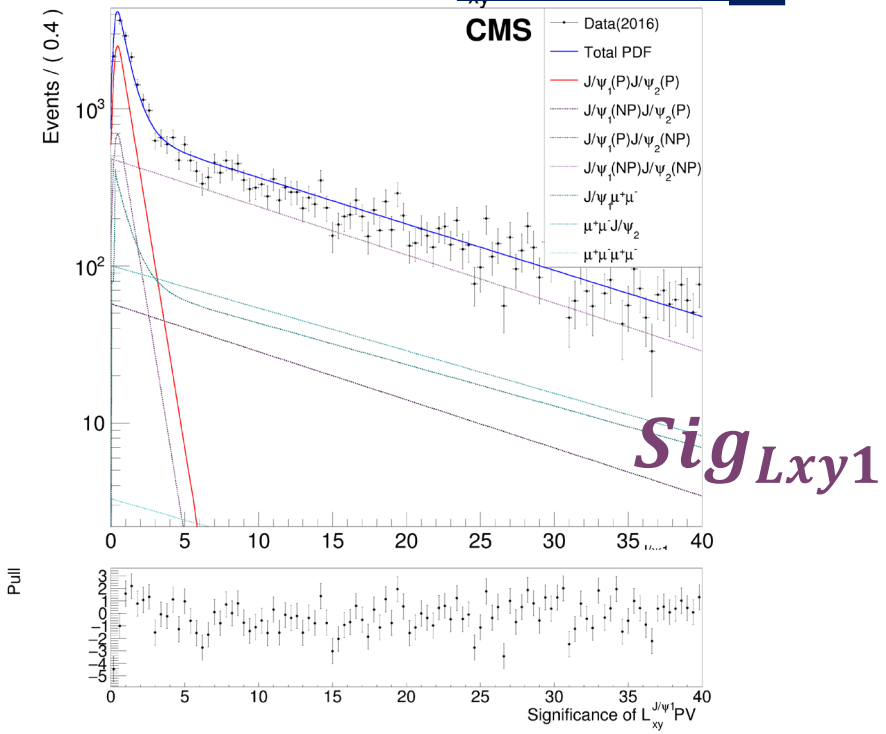
- $^{2000-1880}/_{2000} = 6\%$

Systematic

- Lifetime variables

Case	Component	$c\tau(J/\psi_1)+c\tau(J/\psi_2)$	$c\tau(J/\psi_1)+Sig_{Lxy}(J/\psi_2)$	$c\tau(J/\psi_1)+d^{J/\psi}$	$Sig_{Lxy}(J/\psi_1)+Sig_{Lxy}(J/\psi_2)$	$Sig_{Lxy}(J/\psi_2)+d^{J/\psi}$
w/ tight vertex cut	prompt	1.56%	1.07%	3.85%	1.69%	6.90%
	non-prompt	4.69%	4.42%	16.78%	11.24%	31.41%
w/o tight vertex cut	prompt	6.10%	6.24%	5.68%	6.33%	5.62%
	non-prompt	3.73%	3.17%	4.10%	2.78%	4.39%

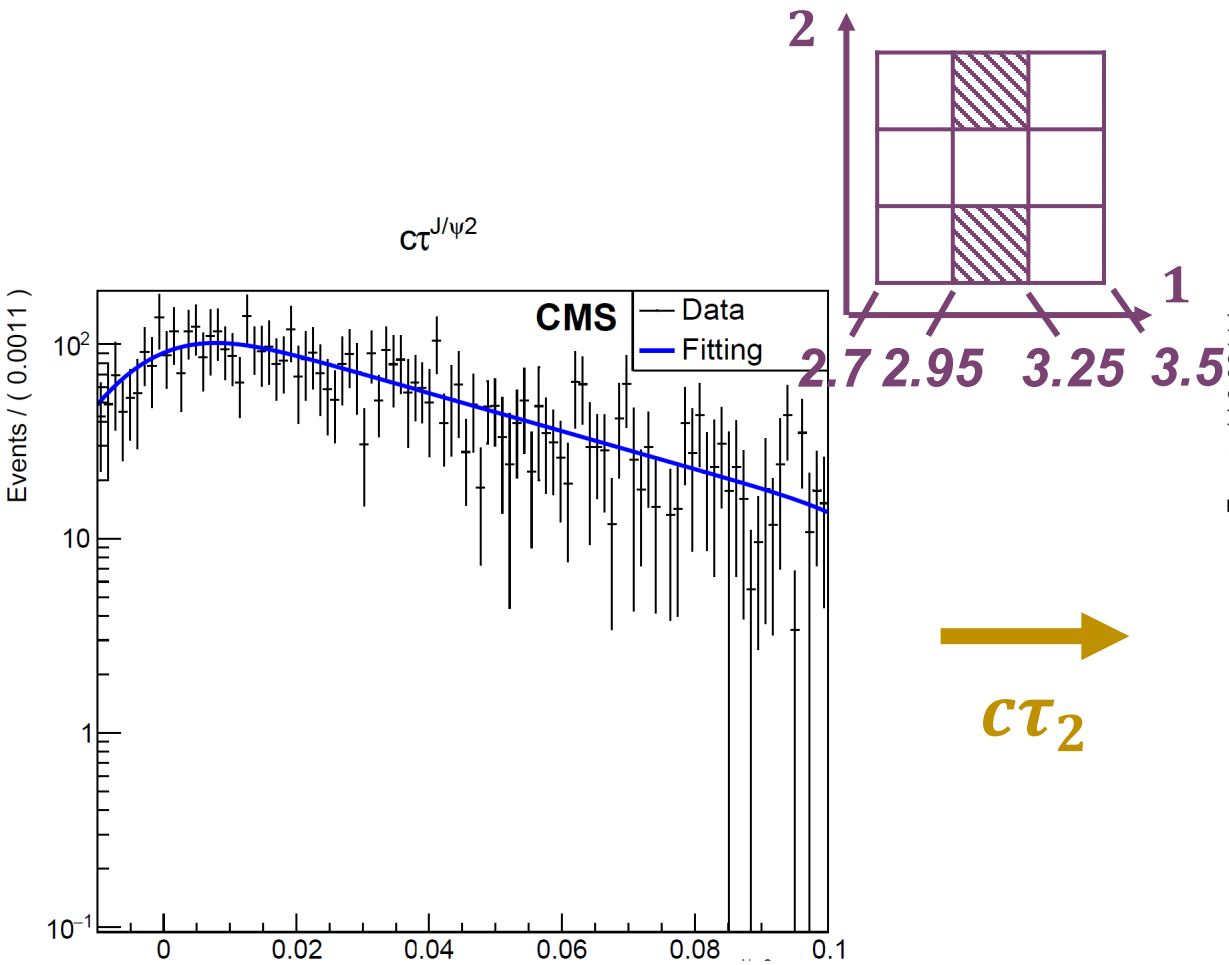
- **7342**
- **7361**
- $^{7361-7342}/_{7342} = 0.3\%$



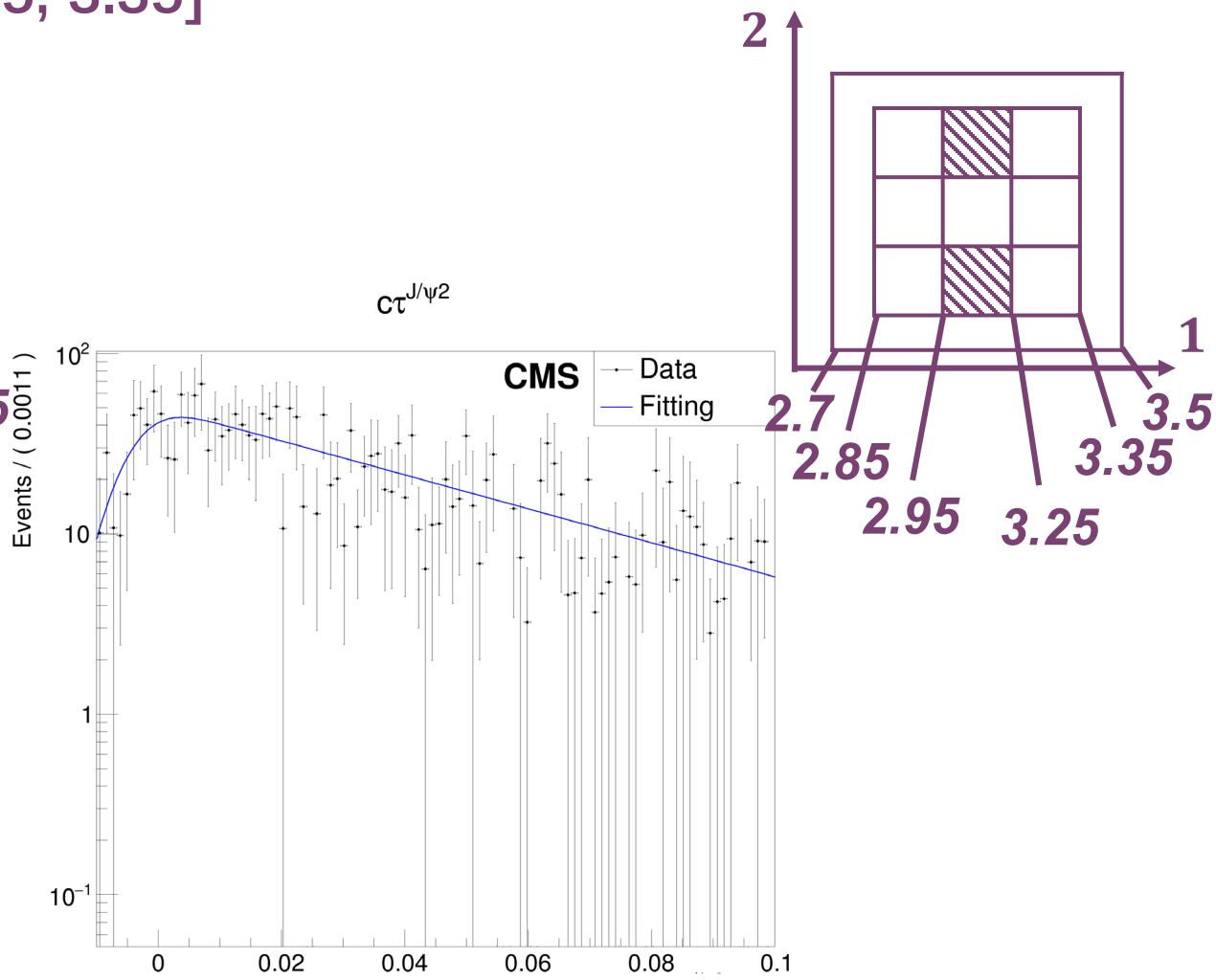
Sig_{Lxy1}

$M(\mu^+\mu^-)$ requirement

- Current requirement is [2.7, 3.5]
- HLT requirement (for one pair) is [2.85, 3.35]

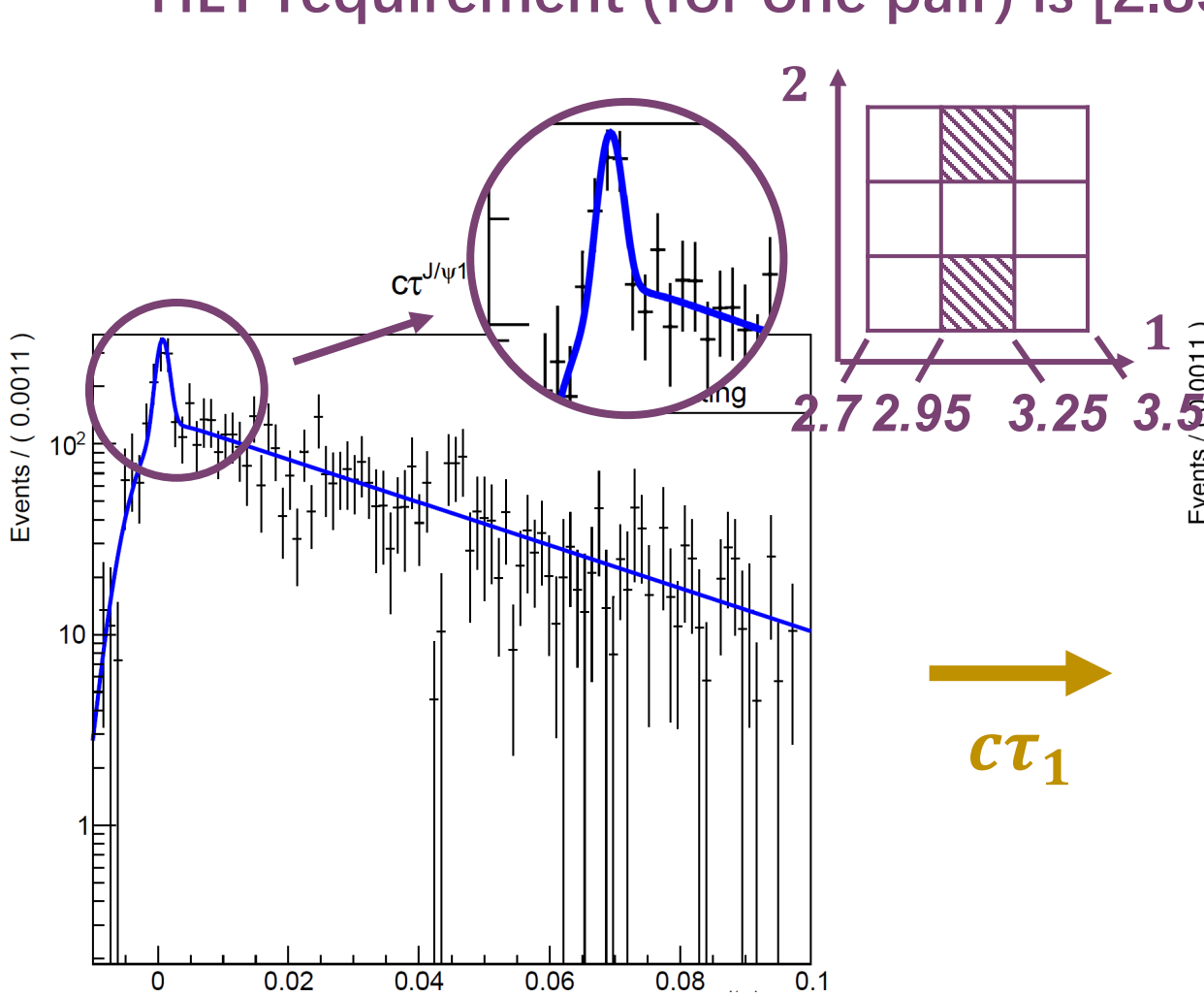


$c\tau_2$



$M(\mu^+\mu^-)$ requirement

- Current requirement is [2.7, 3.5]
- HLT requirement (for one pair) is [2.85, 3.35]



$c\tau_1$