

1TeV background samples for VBS search

ILD Analysis/Software Meeting

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HELMHOLTZ
RESEARCH FOR GRAND CHALLENGES



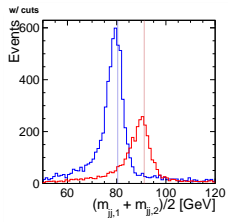
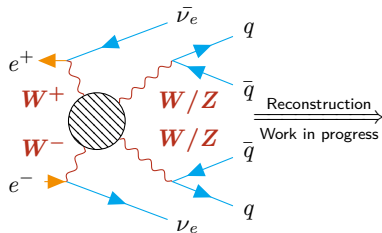
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Vector Boson Scattering @ ILD

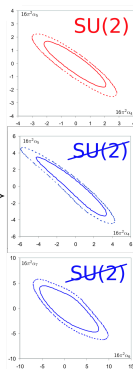
Studying VBS in $\nu\bar{\nu}q\bar{q}q\bar{q}$

$WW \rightarrow WW/ZZ$ vertex needs SM H for unitarization
 \Rightarrow Candidate for H -BSM effects!

BUT: Requires high $\sqrt{s} \rightarrow \sqrt{s} = 1 \text{ TeV}$



Analysis + EFT
 Planned



Need 1TeV signal + background samples for analysis:

$\Rightarrow q\bar{q}q\bar{q} + \nu\nu/l\nu/ll$

Required 1TeV signal

Class	Process	P-Nr.	#evts
6f_vvWW	vvxyyx	35867	50800
	vvxyyx	35868	10000
6f_xxxxZ	xxxxvv	35911	10000
	xxxxvv	35912	10000
6f_yyyyZ	yyyyvv	35935	10000
	yyyyvv	35936	10000

Required 1TeV backgrounds

Class	Process	P-Nr.	#evts	
6f_xxWW	xxveyx	35878	10000	
		35879	10000	
		35880	10000	
		35883	10000	
	xxvlyx	35891	10000	
		35892	10000	
		xxxyev	35895	10000
			35896	10000
		xxxylv	35897	10000
			35899	10000
6f_eeWW	eexyyx	35900	10000	
		35750	30100	
		35751	72700	
		35752	14800	
		35753	30300	

Class	Process	P-Nr.	#evts	
6f_lIWW	llxyyx	35783	10800	
		35784	10000	
		6f_xxxxZ	xxxxll	35915
35916	10000			
xxxxee	35918			10000
	35919			10000
35920	10000			
6f_yyyyZ	yyyyll	35921	10000	
		35939	10000	
		35940	10000	
		yyyyee	35942	10000
			35943	10000
		35944	10000	
		35945	10000	