

Luminosities for Different Initial State Particles

■ We have never generated events
using the $e^+\gamma$, γe^+ , e^+e^+ beams

125 GeV

gam gam= 3.45715879D+34
gam e-= 2.82199135D+34
e- gam= 2.91549390D+34
e- e-= 9.84671367D+33
gam e+= 4.09697231D+33
e+ gam= 4.28140249D+33
e- e+= 4.15613583D+33
e+ e-= 4.32446397D+33
e+ e+= 4.30082022D+32

280 GeV

gam gam= 1.84308661D+35
gam e-= 6.90396454D+34
e- gam= 7.01566500D+34
e- e-= 1.43938424D+34
gam e+= 2.96657231D+34
e+ gam= 2.89982221D+34
e- e+= 1.79626608D+34
e+ e-= 1.71502336D+34
e+ e+= 3.10404768D+33

WHS Status 280 GeV

■ We have never generated events using the $e^+\gamma$, γe^+ , e^+e^+ beams

$\gamma\gamma$	$f\bar{f}$	$f\bar{f}f\bar{f}$	$WWf\bar{f}$	$WZf\bar{f}$	
$e^-\gamma$	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$	$e\bar{f}f\bar{f}$	$\nu\bar{f}f\bar{f}$
$e^-\gamma / \gamma^*\gamma$	$f\bar{f}$	$f\bar{f}f\bar{f}$			
$e^+\gamma$	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$	$e\bar{f}f\bar{f}$	$\nu\bar{f}f\bar{f}$
$e^+\gamma / \gamma^*\gamma$	$f\bar{f}$	$f\bar{f}f\bar{f}$			
e^-e^-	ee	$eef\bar{f}$	$e\nu f\bar{f}$		
$e^-e^- / e^-\gamma^*$	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$		
e^-e^- / γ^*e^-	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$		
$e^-e^- / \gamma^*\gamma^*$	$f\bar{f}$				
e^-e^+	$f\bar{f}$	$f\bar{f}f\bar{f}$	$WWf\bar{f}$	$WZf\bar{f}$	
$e^-e^+ / e^-\gamma^*$	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$	eWW	νWZ
e^-e^+ / γ^*e^+	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$	eWW	νWZ
$e^-e^+ / \gamma^*\gamma^*$	$f\bar{f}$	WW			
γe^-	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$	$e\bar{f}f\bar{f}$	$\nu\bar{f}f\bar{f}$
$\gamma e^- / \gamma\gamma^*$	$f\bar{f}$	$f\bar{f}f\bar{f}$			
γe^+	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$	$e\bar{f}f\bar{f}$	$\nu\bar{f}f\bar{f}$
$\gamma e^+ / \gamma\gamma^*$	$f\bar{f}$	$f\bar{f}f\bar{f}$			
e^+e^+	ee	$eef\bar{f}$	$e\nu f\bar{f}$		
$e^+e^+ / e^+\gamma^*$	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$		
e^+e^+ / γ^*e^+	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$		
$e^+e^+ / \gamma^*\gamma^*$	$f\bar{f}$				
e^+e^-	$f\bar{f}$	$f\bar{f}f\bar{f}$	$WWf\bar{f}$	$WZf\bar{f}$	
$e^+e^- / e^+\gamma^*$	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$	eWW	νWZ
e^+e^- / γ^*e^-	$e\gamma$	$eff\bar{f}$	$\nu f\bar{f}$	eWW	νWZ
$e^+e^- / \gamma^*\gamma^*$	$f\bar{f}$	WW			

■ .sin ready all polarizations

■ .sin ready for 1 polarization

■ Processes with virtual photons γ^* which, until now, have been ignored

WHS Status 125 GeV

■ We have never generated events using the $e^+\gamma$, γe^+ , e^+e^+ beams

$\gamma\gamma$	$f\bar{f}$	$f\bar{f}f\bar{f}$	
$e^-\gamma$	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
$e^-\gamma / \gamma^*\gamma$	$f\bar{f}$		
$e^+\gamma$	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
$e^+\gamma / \gamma^*\gamma$	$f\bar{f}$		
e^-e^-	ee	$eeff\bar{f}$	$evff\bar{f}$
$e^-e^- / e^-\gamma^*$	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
e^-e^- / γ^*e^-	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
$e^-e^- / \gamma^*\gamma^*$	$f\bar{f}$		
e^-e^+	$f\bar{f}$	$f\bar{f}f\bar{f}$	
$e^-e^+ / e^-\gamma^*$	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
e^-e^+ / γ^*e^+	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
$e^-e^+ / \gamma^*\gamma^*$	$f\bar{f}$		
γe^-	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
$\gamma e^- / \gamma\gamma^*$	$f\bar{f}$		
γe^+	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
$\gamma e^+ / \gamma\gamma^*$	$f\bar{f}$		
e^+e^+	ee	$eeff\bar{f}$	$evff\bar{f}$
$e^+e^+ / e^+\gamma^*$	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
e^+e^+ / γ^*e^+	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
$e^+e^+ / \gamma\gamma^*$	$f\bar{f}$		
e^+e^-	$f\bar{f}$	$f\bar{f}f\bar{f}$	
$e^+e^- / e^+\gamma^*$	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
e^+e^- / γ^*e^-	$e\gamma$	$eff\bar{f}$	$vff\bar{f}$
$e^+e^- / \gamma^*\gamma^*$	$f\bar{f}$		

■ .sin ready all polarizations

■ Processes with virtual photons γ^* which, until now, have been ignored