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# Status Update on WW analysis at 1 TeV

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DESY

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# Introduction

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- Assess the accuracy of the beam polarization measurement using annihilation data, at  $E_{\text{CM}} = 1 \text{ TeV}$ .
- Use the process:  $e^+e^- \rightarrow W^+W^- \rightarrow qq\nu$ ,  $l = e, \mu$ 
  - High cross section, highly dependent on polarization
- I am using the official DBD samples.
- Include signal and SM processes: 2f, 4f, 6f.
- $100 \text{ fb}^{-1}$  for each polarization

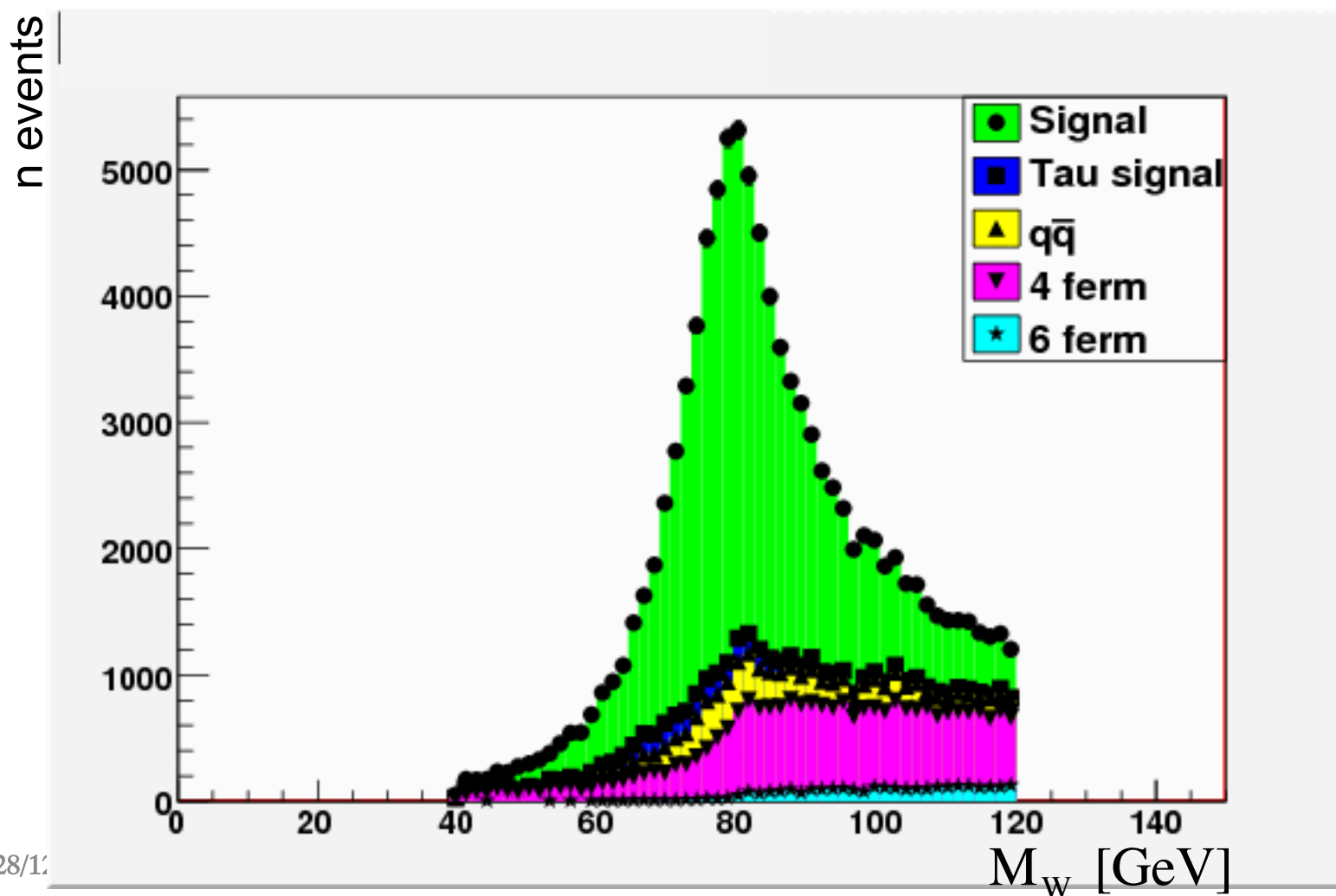
# Selection

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- Number of reconstructed PFOs  $> 10$
- Visible energy  $< 1200$  GeV
- Visible mass  $> 100$  GeV
- Transverse momentum  $> 5$  GeV
- One isolated lepton (muon or electron)
- Two jets reconstructed with the Kt algorithm in the exclusive mode with  $R=1.3$
- $40 < M_W^{\text{fit}} < 120$  GeV
- $\cos \theta_W > -0.95$

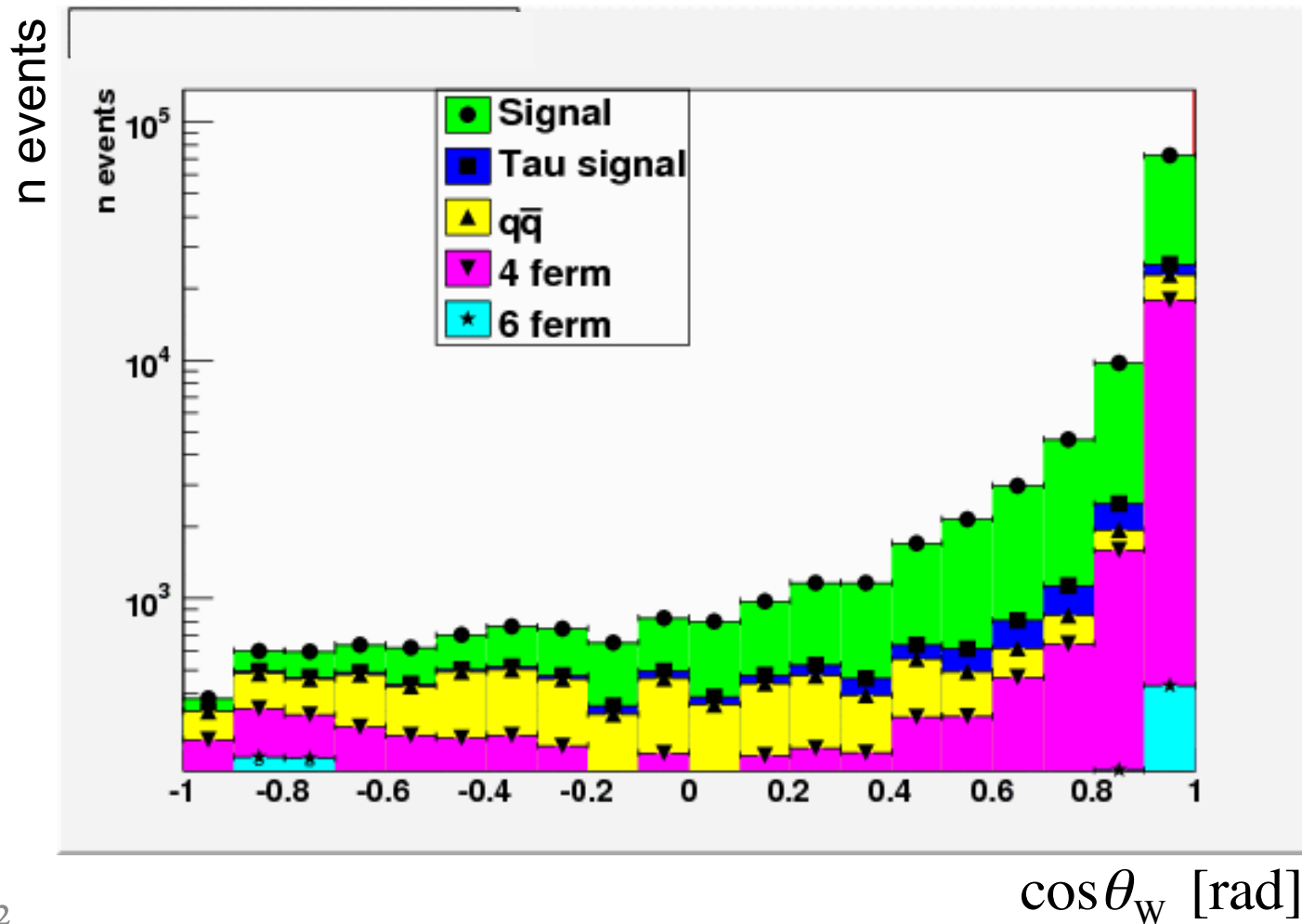
# W Invariant Mass

$100 \text{ fb}^{-1} \text{ Pol}(e^-/e^+) = -80\%, +20\%$

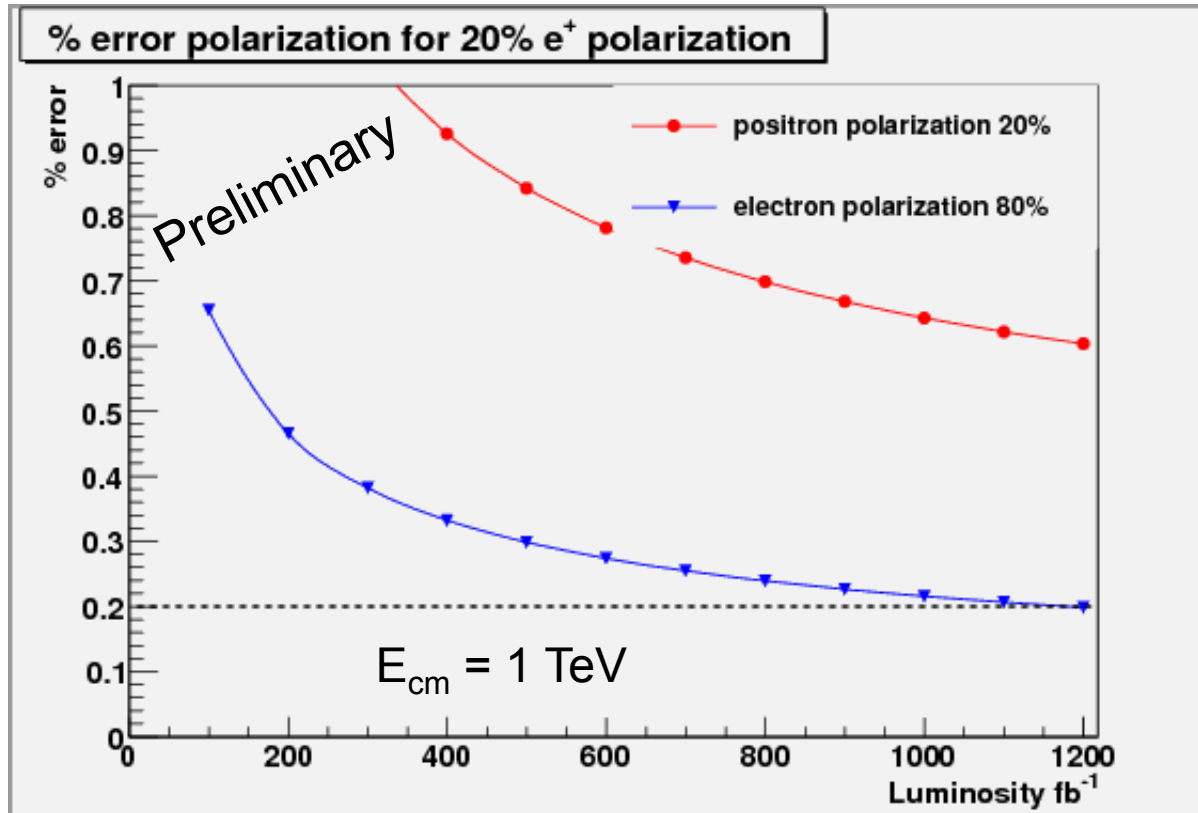


# Cos W Production Angle

$100 \text{ fb}^{-1} \text{ Pol}(e^-/e^+) = -80\%, +20\%$



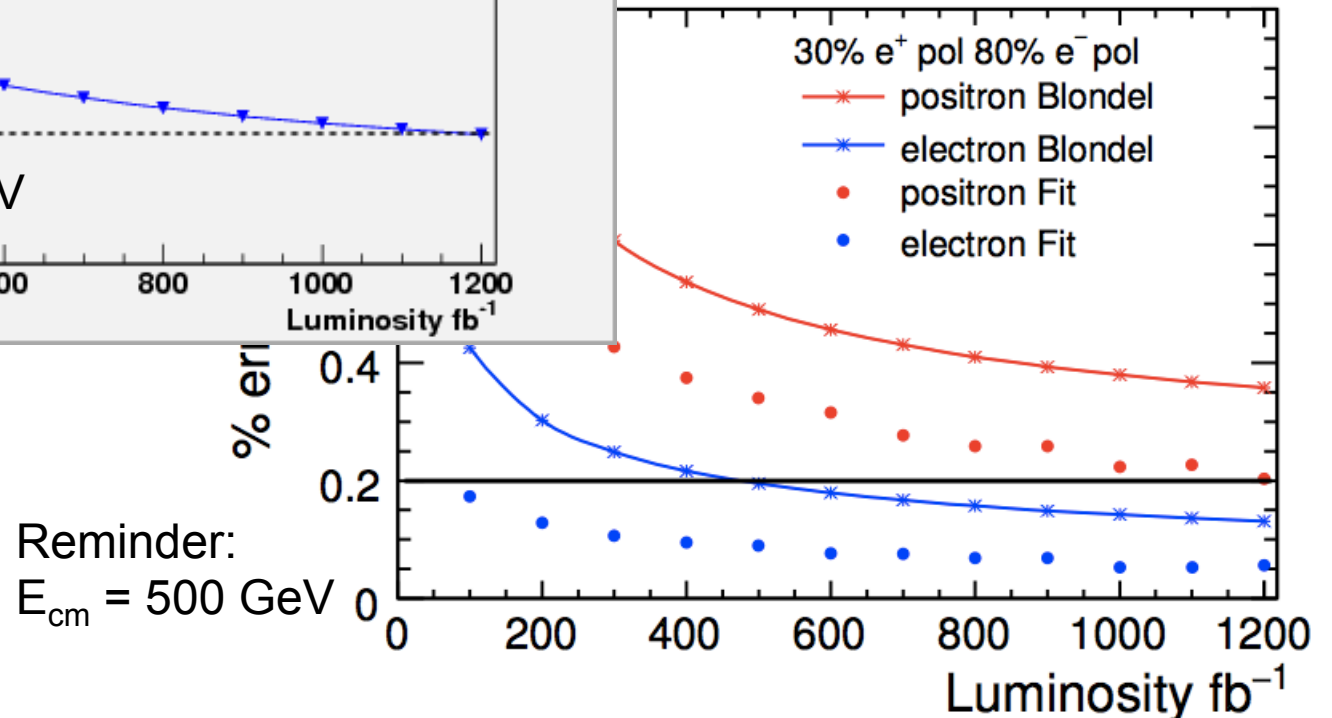
# Polarization Measurement



Blondel method with  
400 fb<sup>-1</sup> luminosity

25%/25%/25%/25%

(-0.8,-0.2)/(-0.8,+0.2)/(0.8,-0.2)/(0.8,0.2)



# Next Steps

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- Within the coming two weeks:
  - Understand and obtain final numbers for the efficiency and background contamination.
  - Apply the fit method.