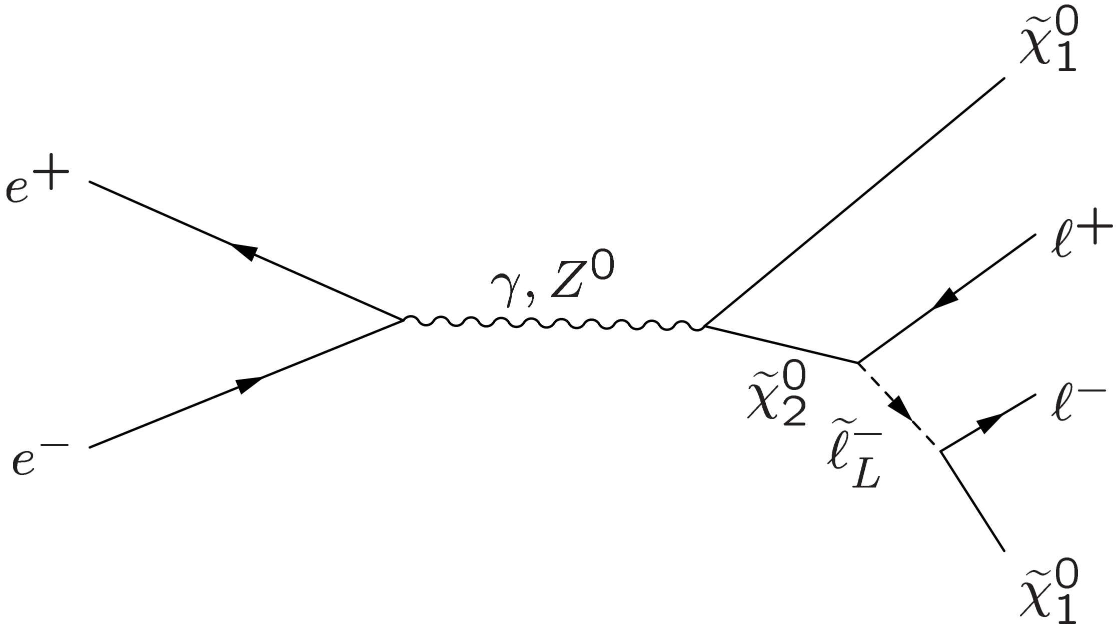
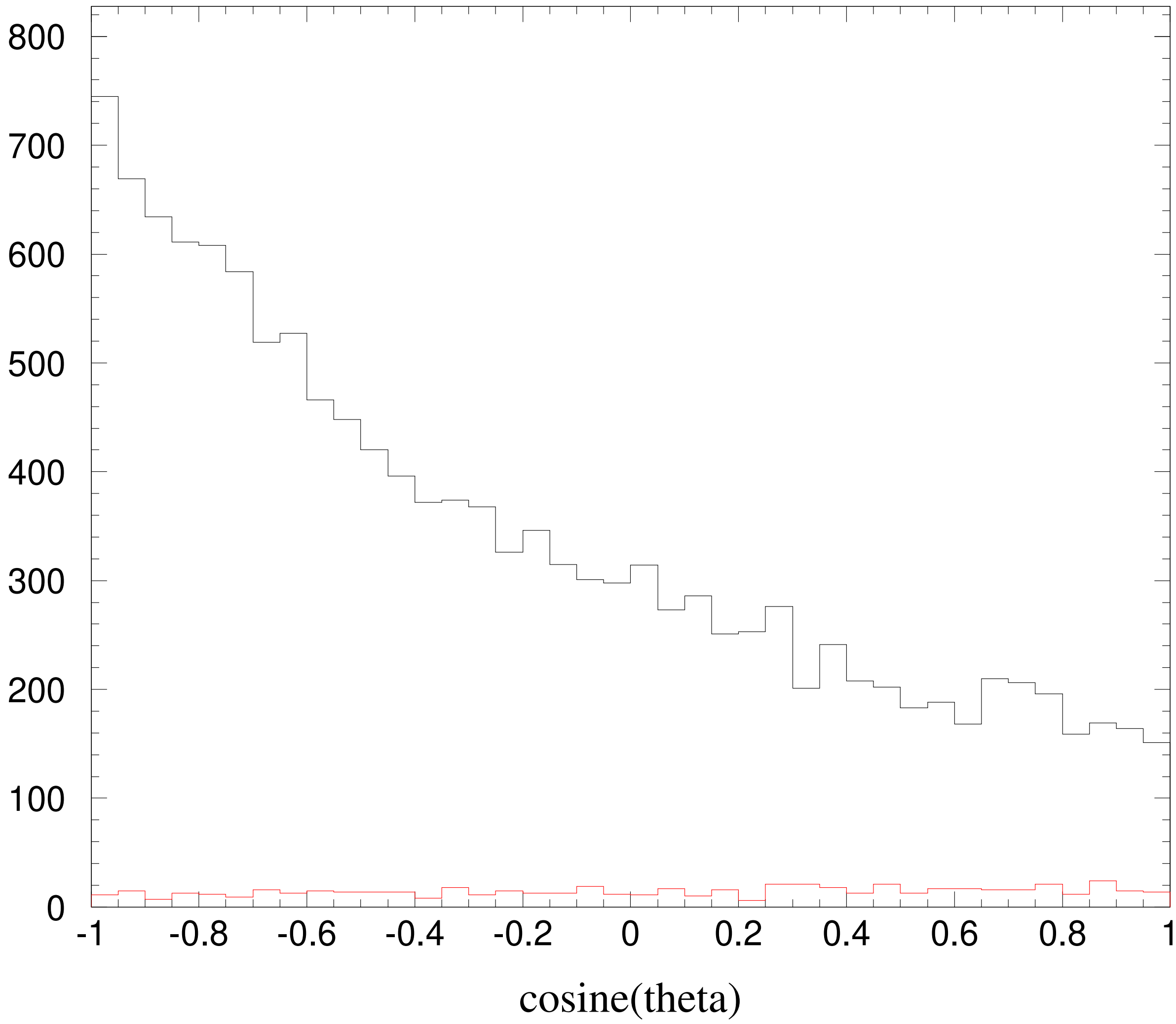
Production of $\tilde{\chi}_2^0$ Neutralinos
at Point two, 500 GeV



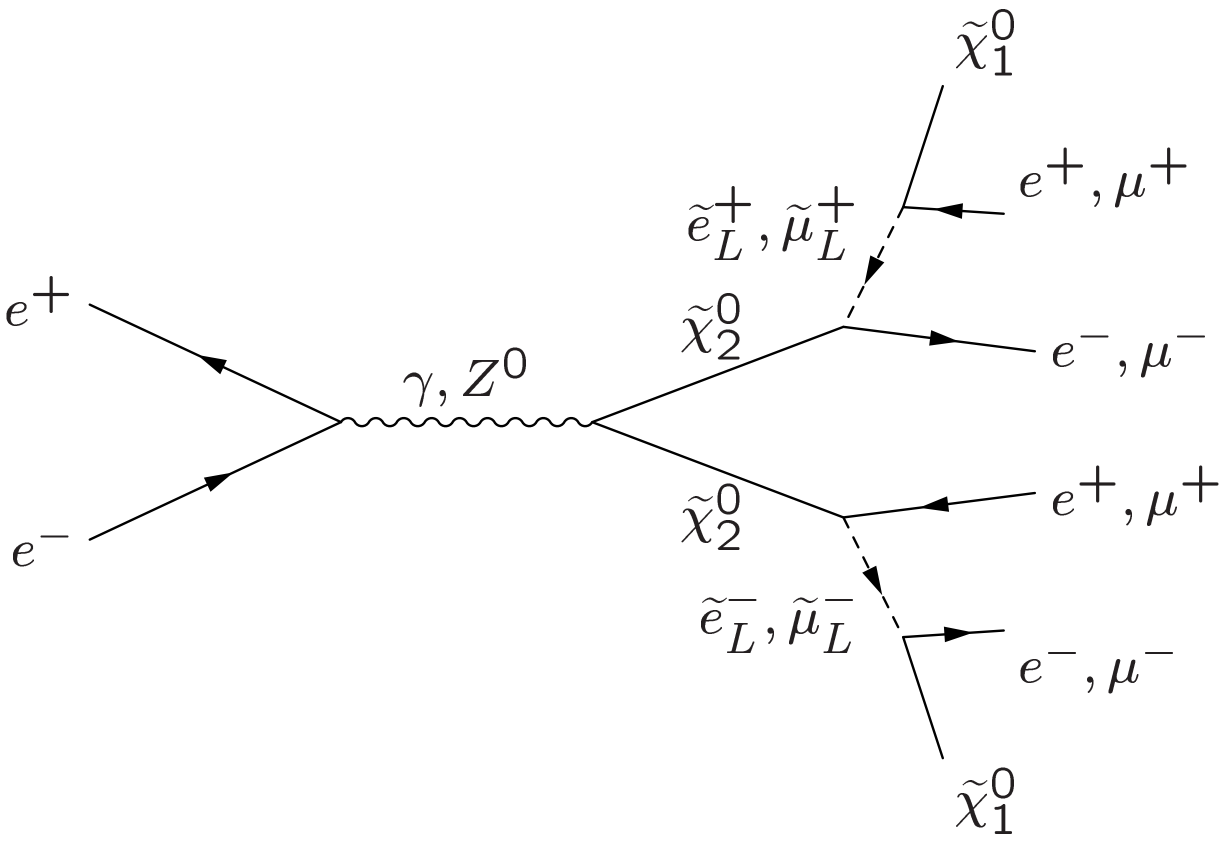
Parameters of Event Generation:

Energy ($\sqrt{s}$)	500 GeV
Polarization	80% Left
Integrated Luminosity	50 fb^{-1}



- The red line is the signal and the black line is irreducible background which comes from the decay of $\tilde{\ell}_L^{\pm}$

Production of $\tilde{\chi}_2^0$ Neutralinos
at Point two, 750 GeV



Parameters of Event Generation:

Energy ($\sqrt{s}$)	750 GeV
Polarization	80% Left
Integrated Luminosity	50 fb^{-1}

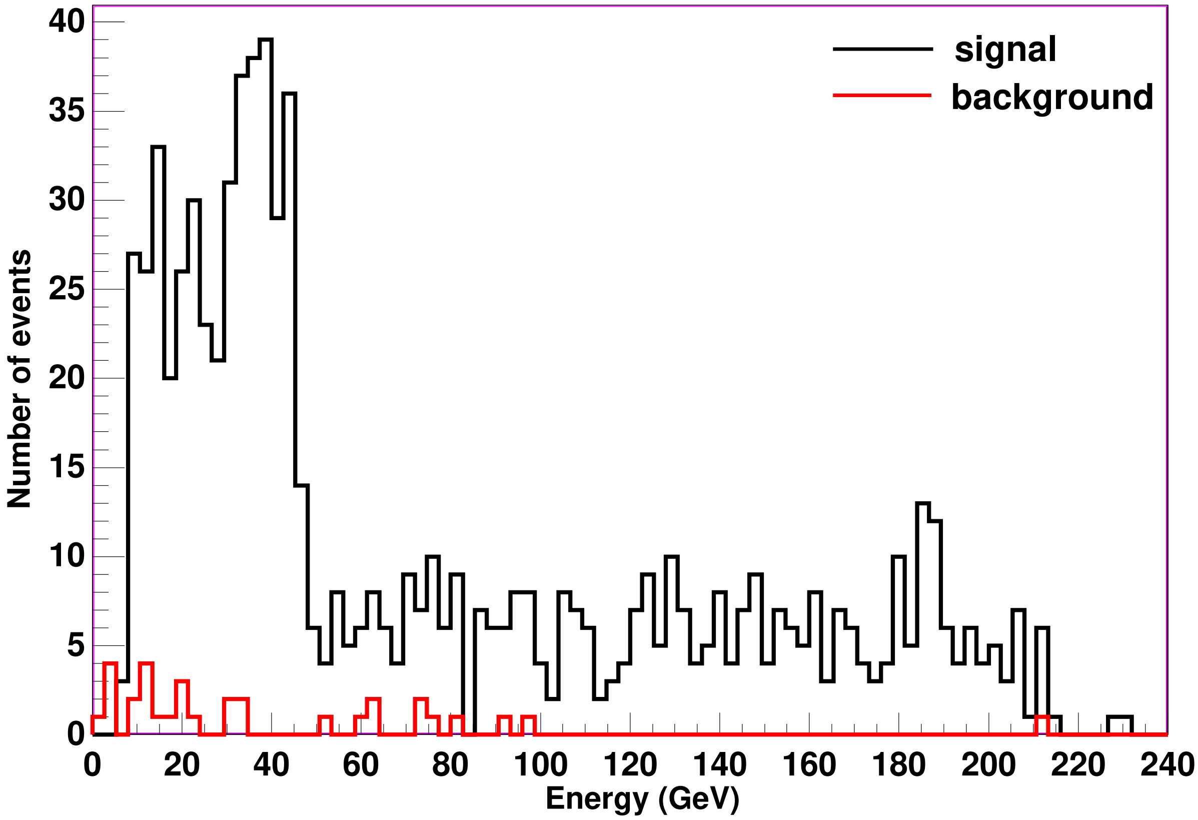
Point 2 Cross Sections for $\sqrt{s} = 500$ and 750 GeV, 80%L and 80%R polarization:

	500 GeV		750 GeV	
	80% L	80% R	80% L	80% R
$\widetilde{\chi}_1^0\widetilde{\chi}_1^0$	65	404	47	272
$\widetilde{\chi}_2^0\widetilde{\chi}_2^0$			81	9
$\widetilde{\chi}_1^0\widetilde{\chi}_2^0$	63	7	84	9
$\widetilde{\chi}_1^+\widetilde{\chi}_1^-$	6	6	207	23
h^0Z^0	70	54	28	22
$\widetilde{\nu}_e\widetilde{\nu}_e$	121	16	680	85
$\widetilde{e}_L^+\widetilde{e}_L^-$	7	2	127	21
$\widetilde{e}_R^+\widetilde{e}_R^-$	53	317	53	374
$\widetilde{e}_R^\pm\widetilde{e}_L^\pm$	145	146	93	94
$\widetilde{\mu}_L^+\widetilde{\mu}_L^-$	5	2	38	12
$\widetilde{\mu}_R^+\widetilde{\mu}_R^-$	25	75	18	52
$\widetilde{\tau}_L^+\widetilde{\tau}_L^-$	5	1	37	11
$\widetilde{\tau}_R^+\widetilde{\tau}_R^-$	50	150	36	105
total	590	1104	1538	1064

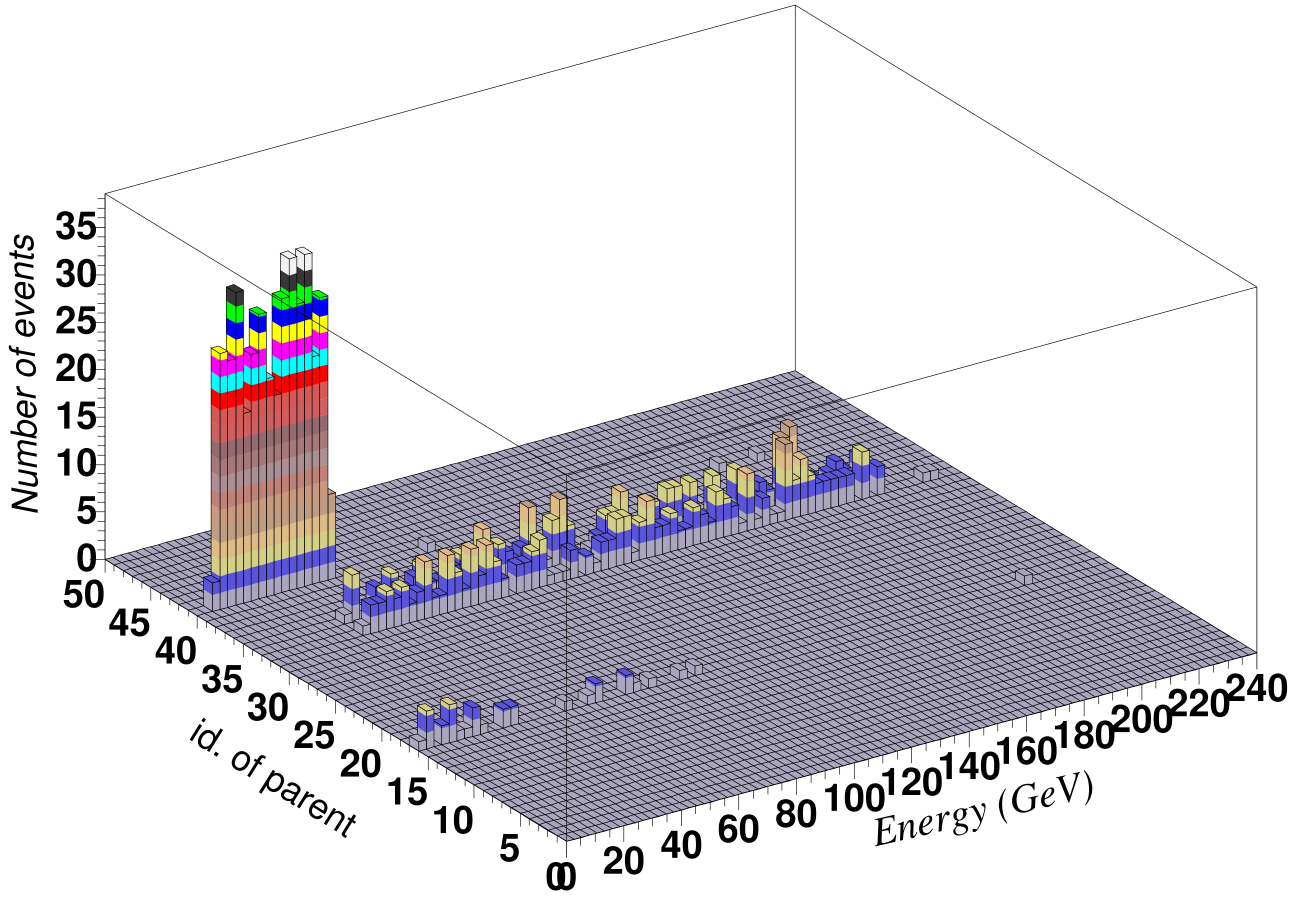
Techniques:

- Look only at events with visible energy less than 675 GeV
- Look only at events with four leptons in the final state, with one of the following configurations:
  - Four electrons
  - Four muons
  - Two electrons and two muons
- Fit resulting Energy distributions and use the endpoint method to determine sparticle masses ($M_{\tilde{\chi}_1^0}$, $M_{\tilde{\chi}_2^0}$, $M_{\tilde{\ell}_L^\pm}$)

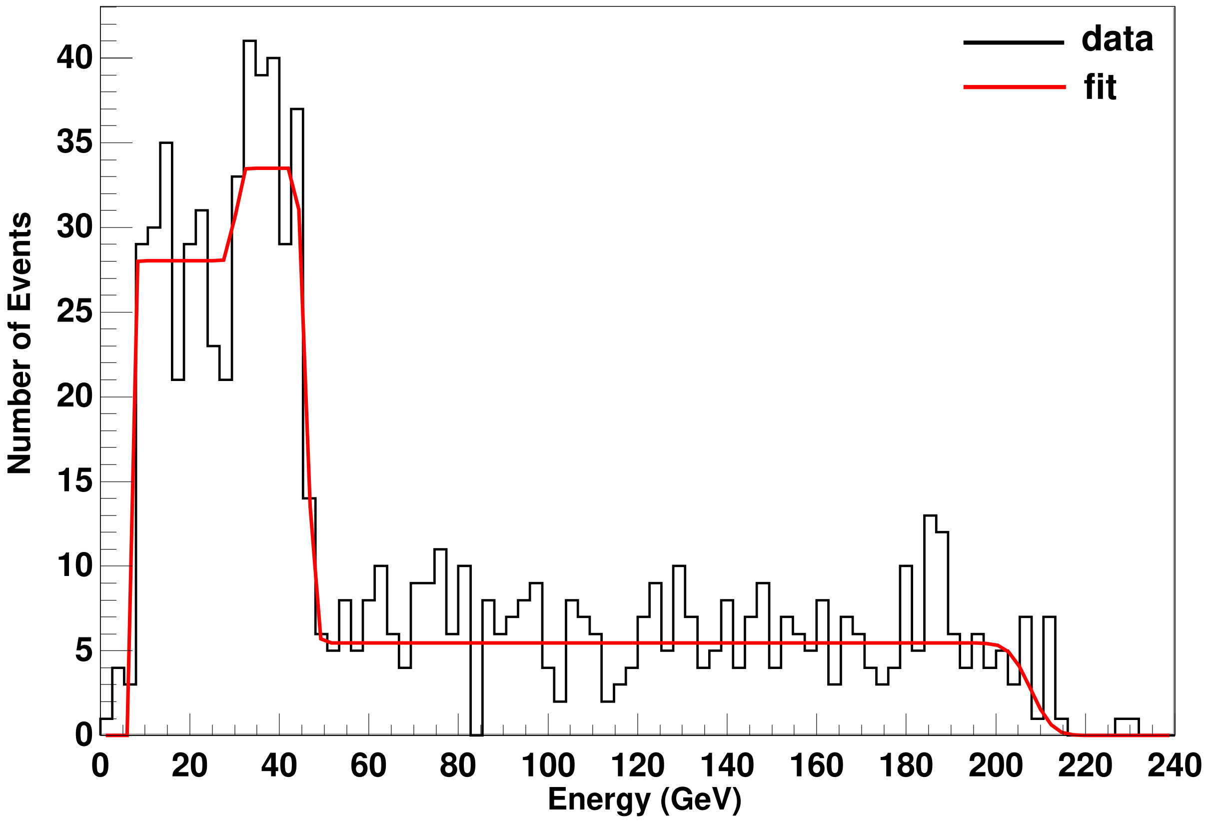
Energy distribution of events satisfying requirements:



- The background in red is irreducible, and comes from τ decays



- Here the id = 16 is for τ's, id = 32 is for $\tilde{e}_L^{\pm}$, id = 34 is for $\tilde{\mu}_L^{\pm}$, id = 40 is for $\tilde{\chi}_2^0$'s



Measured Masses (All in GeV):

	Input Mass	Measured Mass	Error	Discrepancy
$\widetilde{\chi}_1^0$	128.7	130	± 5	1.3
$\widetilde{\chi}_2^0$	257.2	256	± 2	1.2
$\widetilde{\ell}_L^{\pm}$	238.2	237	± 3	1.2