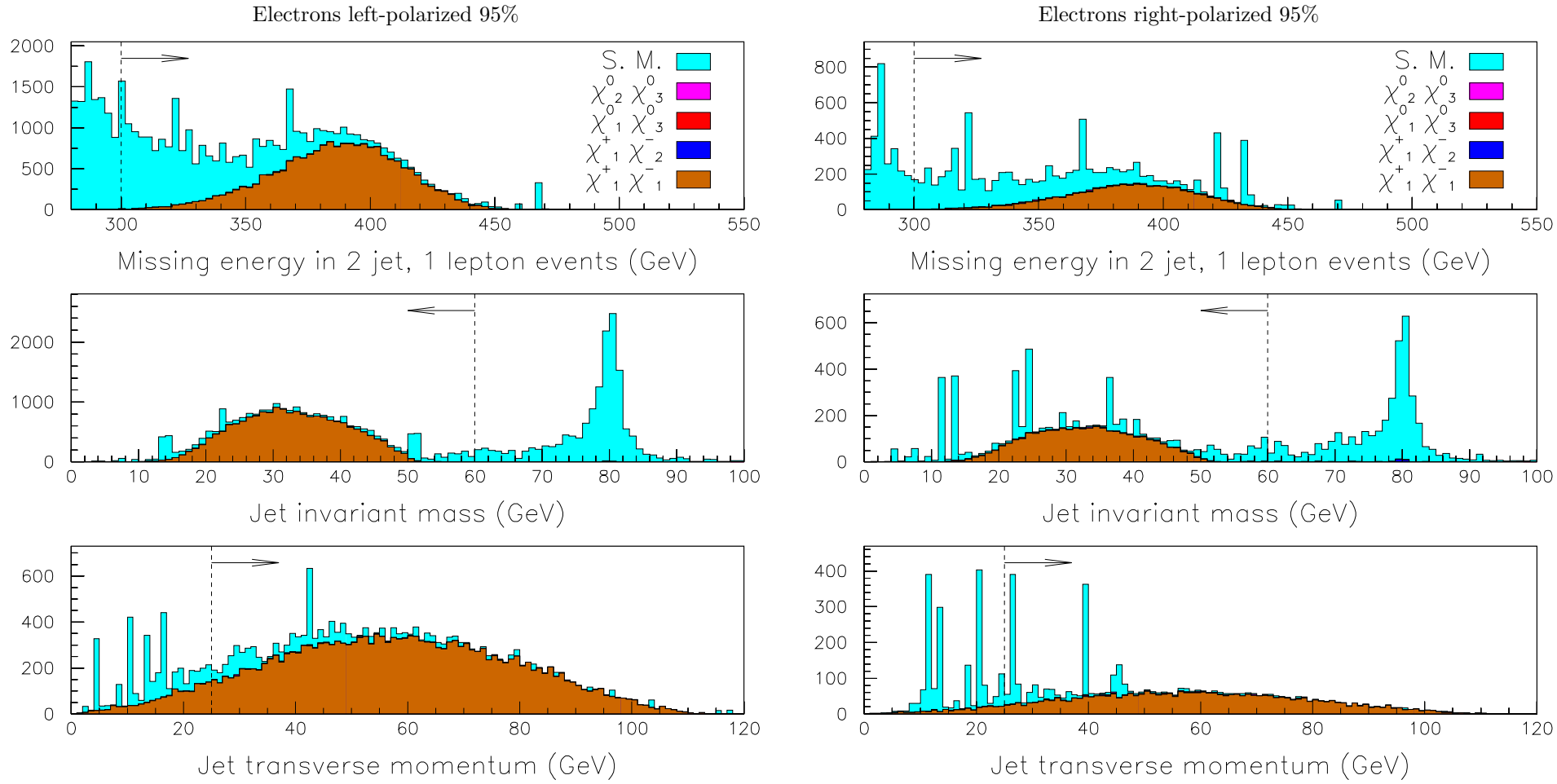


Figure 1: Three cuts used to define $\chi_1^+\chi_1^-$ events, top to bottom: missing energy > 300 GeV, di-jet invariant mass < 60 GeV, and missing transverse jet momentum > 25 GeV, applied cumulatively. The plots on the left show 250 fb^{-1} with electrons left-polarized, the ones on the right show 250 fb^{-1} with electrons right-polarized. Brown is signal, light blue is all Standard Model background. SUSY backgrounds are negligible for this mode.

Jets and leptons must be within $|\cos\theta| < 0.95$.

My backgrounds are *not* two-photon; they are $e^+e^- \to \ell^+\ell^-\nu\bar{\nu}Q\bar{Q}$ (#44, #48) and $\to q\bar{q}b\bar{b}b\bar{b}$ (#50) (where $q = u$, d, c, s, and $Q = u$, d, c, s, b).

What's in my simulation?

- Initial state radiation
- All kinematics of decaying particles (including off-shell $W^{\pm}$ masses from Andreas's function)
- Kinematic cuts that matter: $|\cos\theta| < 0.95$ for jets and lepton, missing transverse jet momentum
- ~~Efficiency loss due to jet-confused lepton~~
- ~~Jet invariant mass smearing (from Z^0 jet invariant mass distribution)~~
- Two-dimensional fit to jet-jet mass/total jet energy
- Data has errors inflated by (completely unbiased) background subtraction

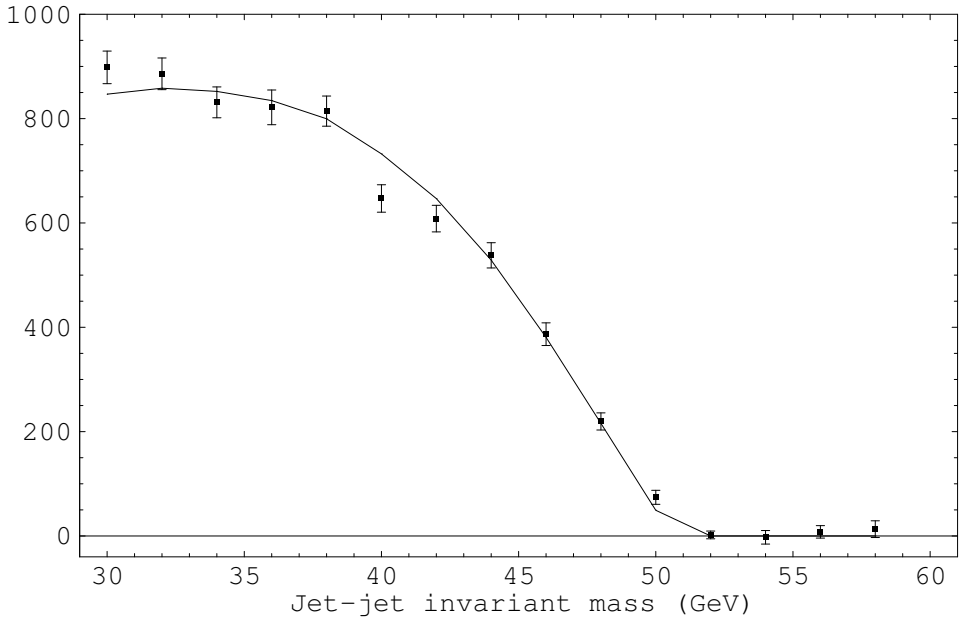
Comparison is now made between generator-level quarks and my model, *not* reconstructed jets and my model.

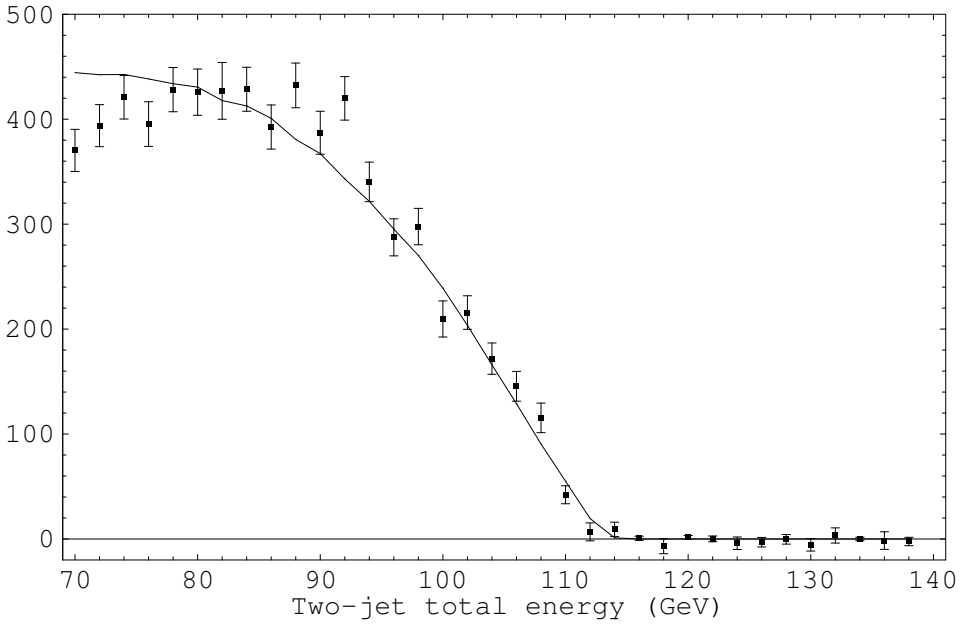
$$\zeta = \frac{|C_V|^2 - |C_A|^2}{|C_V|^2 + |C_A|^2} = 1 \pm 0.0065$$

$$m_{\chi_1^{\pm}} = 159.4 \pm 1.5 \text{ GeV (no bias!)}$$

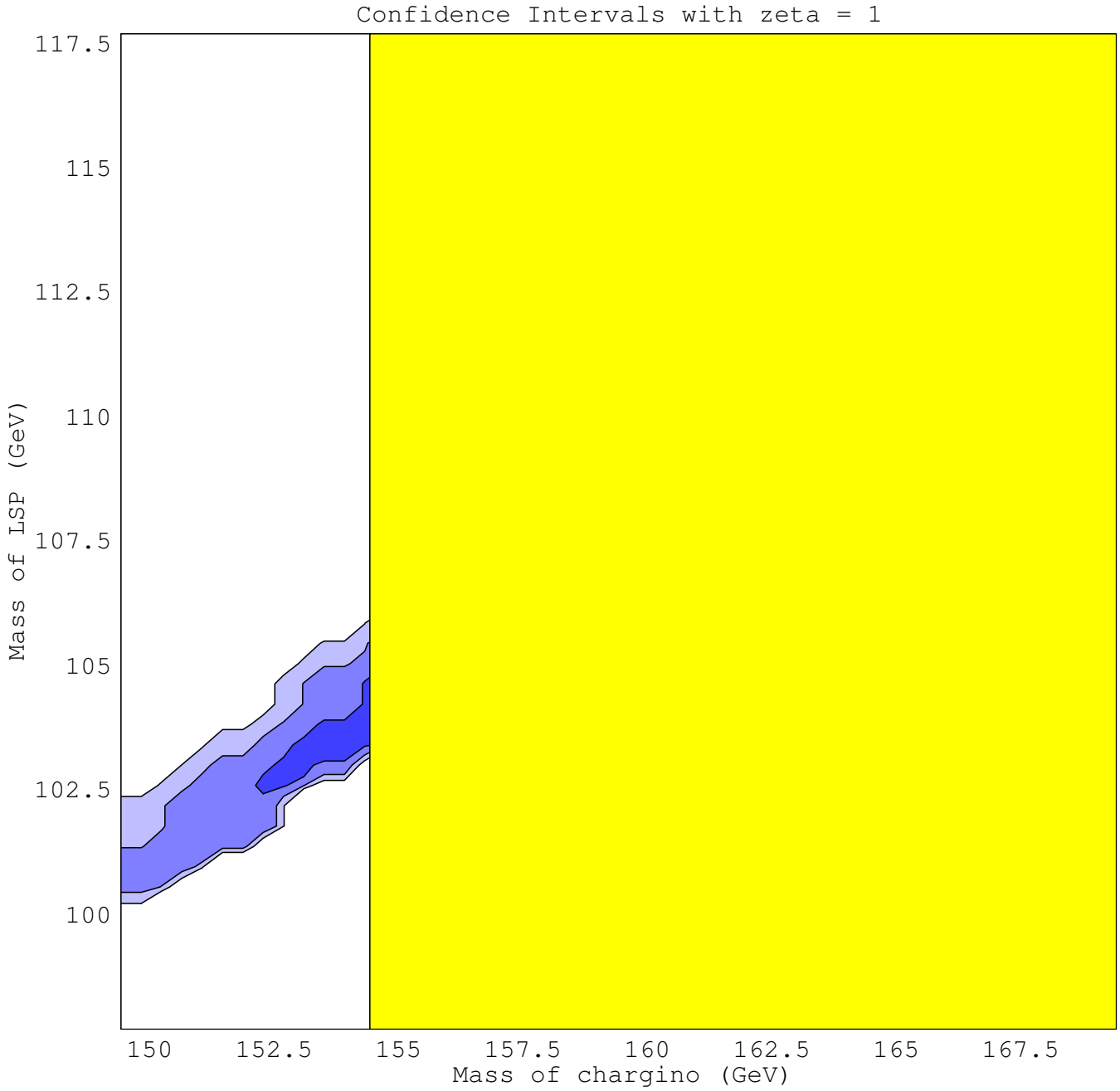
$$m_{\text{LSP}} = 107.7 \pm 1.4 \text{ GeV (no bias!)}$$

What came out? (These are projections of the 2-D distribution.)





What came out? (Yellow was not calculated: I underestimated the time it would take to compute this. One to three sigmas are shown with contours.)



What came out? (Yellow was not calculated: this is a 2-D projection of the initial quick scan from which I derived uncertainties. One to three sigmas are shown with contours.)