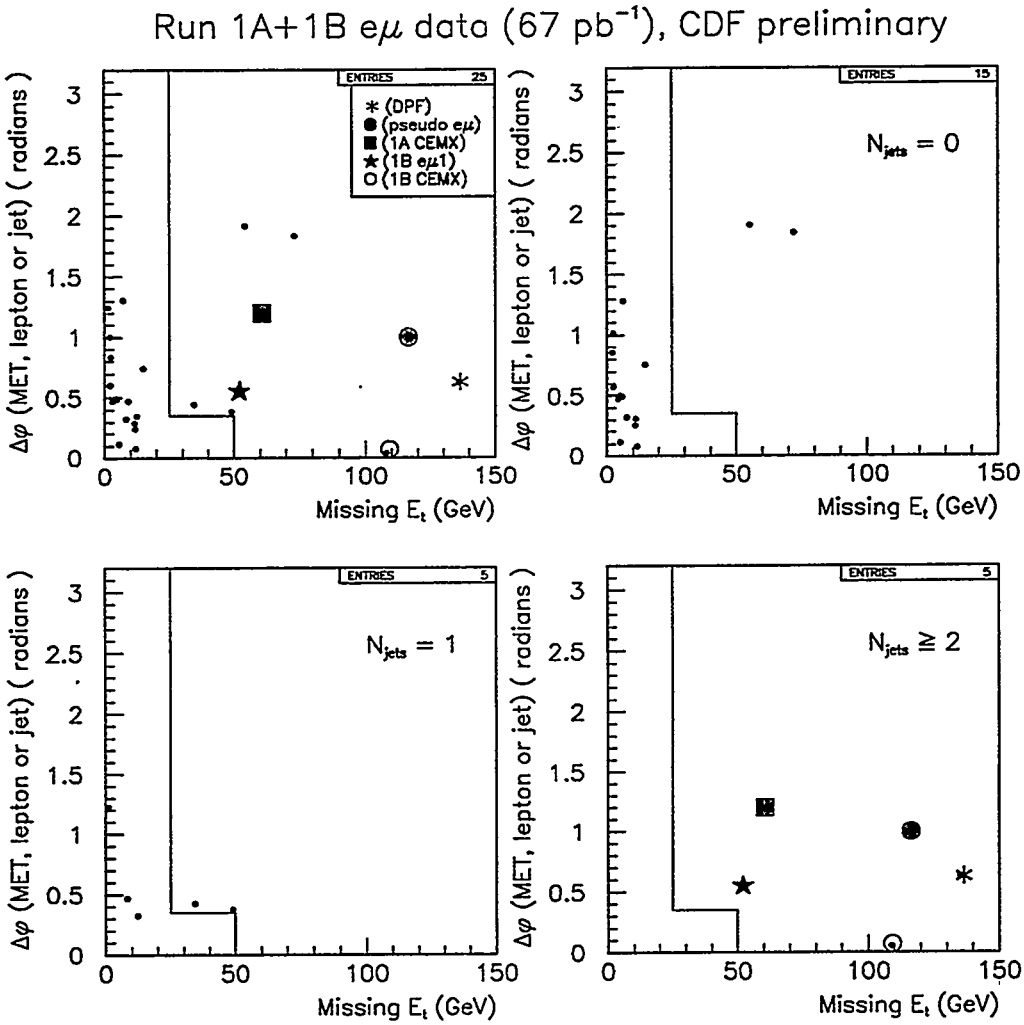

Figure 6: The distribution of the azimuthal opening angle between the missing E_T vector and the highest energy jet or lepton versus the events $\not{E}_T$ is shown for all events, and then for events with 0, 1 and ≥ 2 jets in the $e\mu$ channel. The boundary shows the cuts placed to reject the $Z \rightarrow \tau^+\tau^-$ background.

6.2 Dilepton Backgrounds

The number of dilepton events observed by CDF and DØ is consistent with the rate expected from $t\bar{t}$ production for a top quark mass of order 140 to 150 GeV/c^2. It is necessary to accurately estimate the number of events expected from standard model background processes in order to interpret these event rates.

The most serious potential background comes from Z° production, followed by the decay $Z^\circ \rightarrow \tau^+\tau^-$. The τ leptons then decay leptonically leaving the dilepton signature and missing energy from the four neutrinos. The rate of this background surviving the selection criteria can be accurately estimated using the observed Z° kinematics in the dielectron and dimuon channels and simulating the decay of the tau leptons. Other standard model sources of dileptons are divector boson produc-