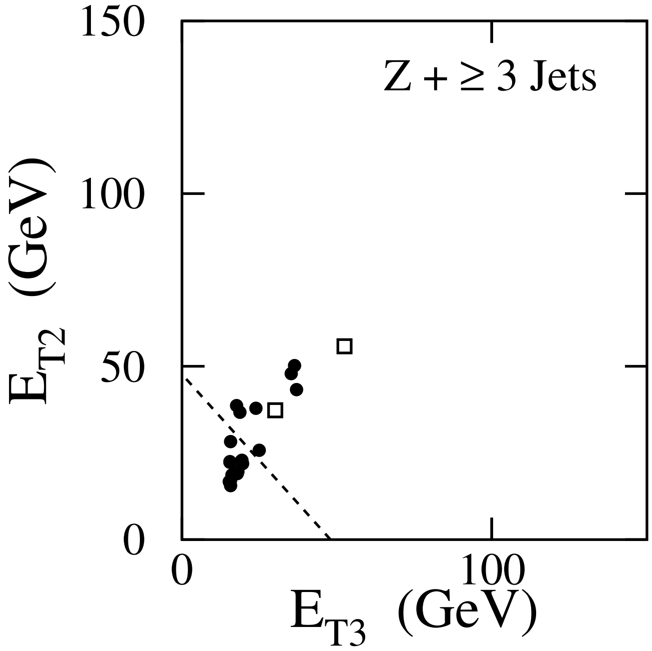

Figure 52: Distribution of E_{T2} versus E_{T3} shown for the 22 Z events with ≥ 3 jets having corrected $E_T > 15$ GeV. The broken line shows the function $E_{T2} + E_{T3} = 48$ GeV. The two events shown as boxes have a b tag.

To test whether VECBOS correctly describes QCD W+multijet production, we begin by comparing predicted and observed distributions for a sample of $W+$ 2 or more jet events. Note that the contribution to the $W+$ 2 or more jet data sample from $t\bar{t}$ production is expected to be small (5% for $M_{top} = 160$ GeV/c^2). In the following, E_{Tn} is defined as the transverse energy of the n^{th}-highest E_T jet in the event. VECBOS is seen to give a reasonable description of the measured E_{T1} distribution (Figure 46), and the measured E_{T2} distribution (Figure 47). VECBOS also gives a fair description of the jet pseudorapidity distribution (Figure 48).

We next compare VECBOS predictions with observed distributions for a sample of events with $Z+$ 2 or more jets and $Z+$ 3 or more jets. Only five Z events pass our selection with three or more jets with uncorrected $E_T > 15$ GeV. Therefore, to improve the statistics of the $Z+$ 3 or more jet data sample, we define the jet multiplicity in our Z events by counting jets with $\mid \eta \mid < 2.4$ and corrected $E_T > 15$ GeV. Note that, on average, the jet energy corrections increase jet energies and therefore by requiring corrected $E_T > 15$ GeV rather than uncorrected $E_T > 15$ GeV, we have in effect relaxed the uncorrected jet E_T threshold by about 5 GeV. There are then 112 $Z+$ 2 or more jet events and 22 $Z+$ 3 or more jet events. The distributions of E_{T1} and E_{T2} for the $Z+$ 2 or more jet sample are shown in Figures 49 and 50, respectively. These distributions appear to be consistent with the VECBOS predictions. However, there is one event with $E_{T2} > 100$ GeV where VECBOS predicts a fraction of an event. This event may be due to either a statistical fluctuation or may indicate a contribution from processes other than QCD $Z+$ 3 or more jet production.