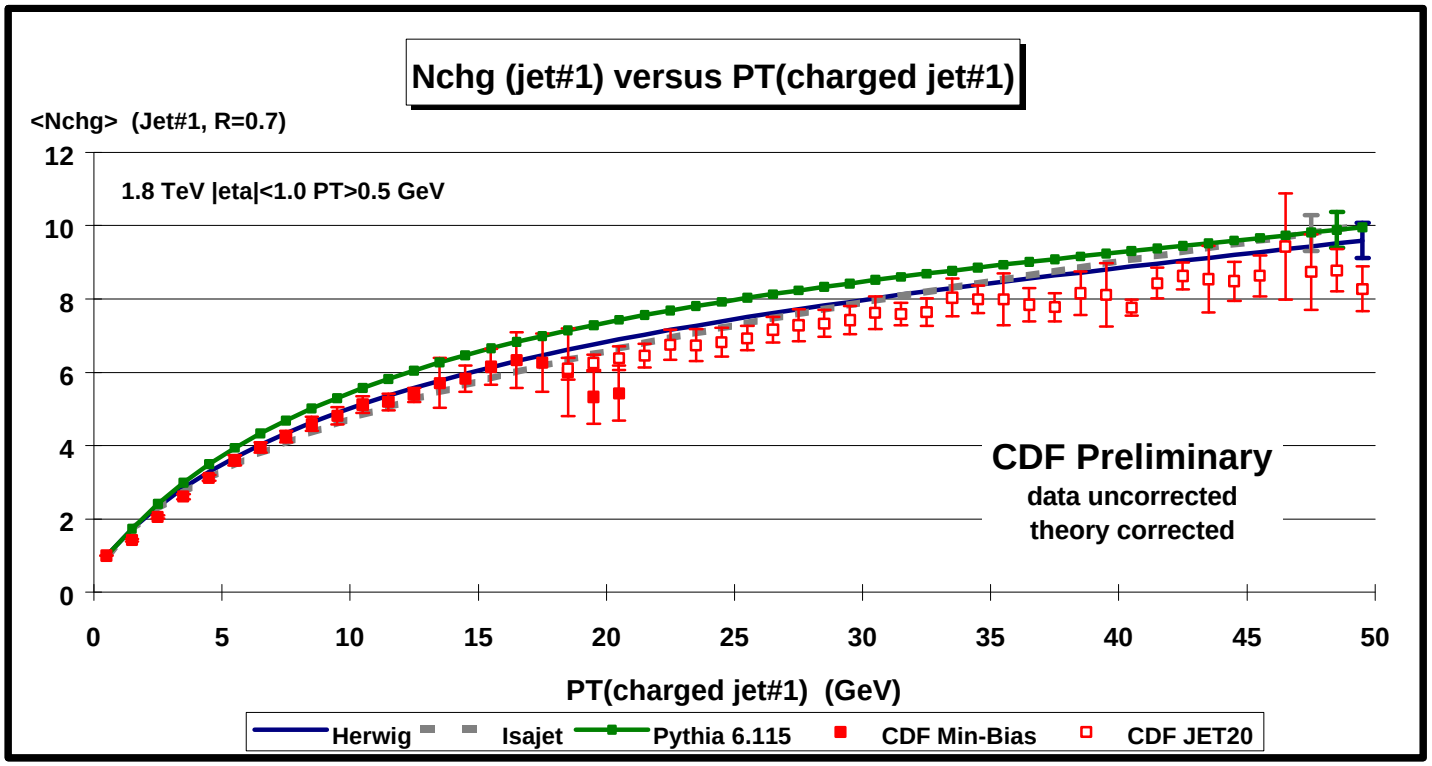
Min-Bias Physics: Jet Evolution & Event Shapes

Plot 1: <Nchg(jet#1)> vs PT(charged jet#1):



Plot shows the average number of charged particles (PT > 0.5 GeV, |η| < 1) within the leading charged jet (R = 0.7) as a function of the PT of the leading charged jet . The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties. The QCD "hard scattering" theory curves (Herwig 5.9, Isajet 7.32, Pythia 6.115) are corrected for the track finding efficiency and have an error (statistical plus systematic) of around 5%.

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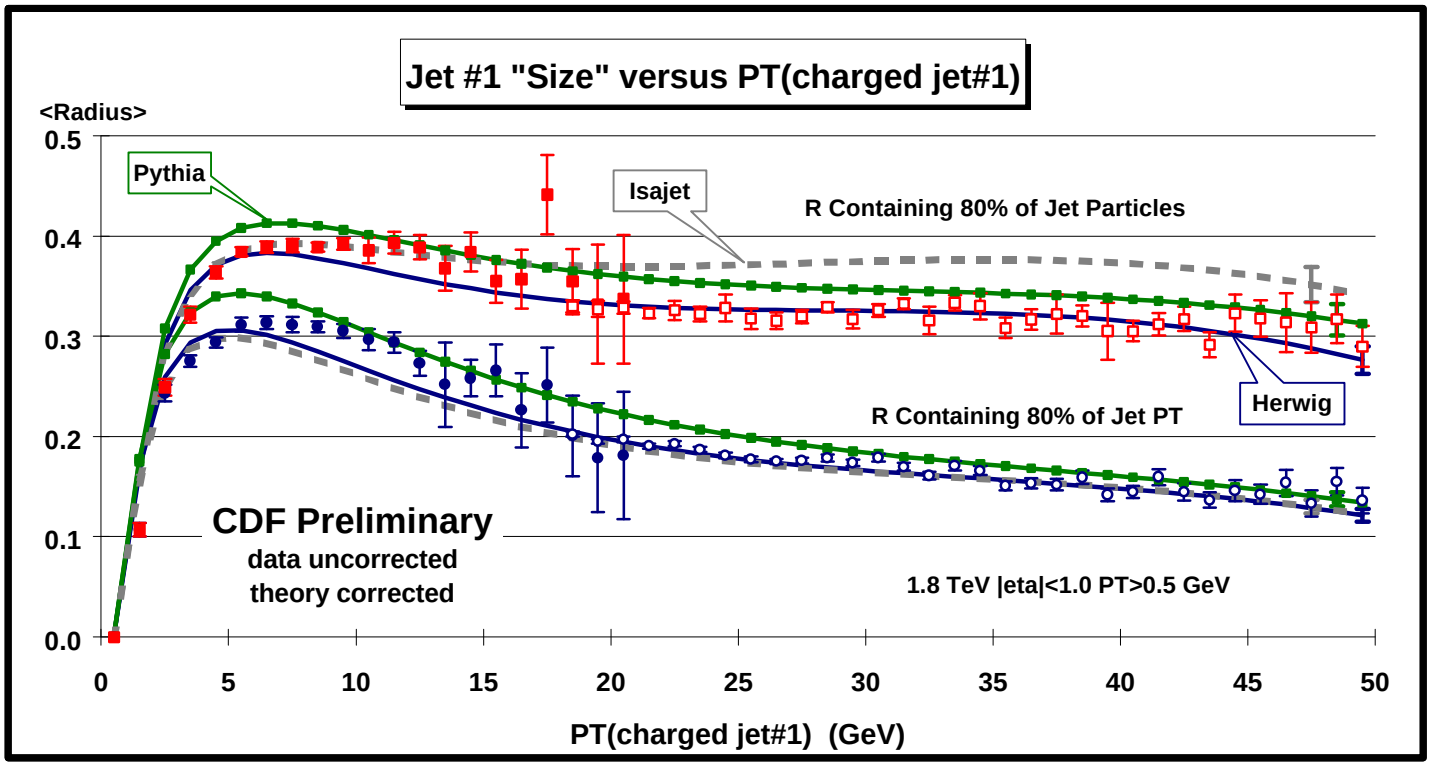
Plot 2: <R(jet#1)> vs PT(charged jet#1):



Plot shows the average radius in η-ϕ space containing 80% of the charged particles (and 80% of the charged PT) as a function of the PT of the leading charged jet . The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties. The QCD "hard scattering" theory curves (Herwig 5.9, Isajet 7.32, Pythia 6.115) are corrected for the track finding efficiency and have an error (statistical plus systematic) of around 5%.

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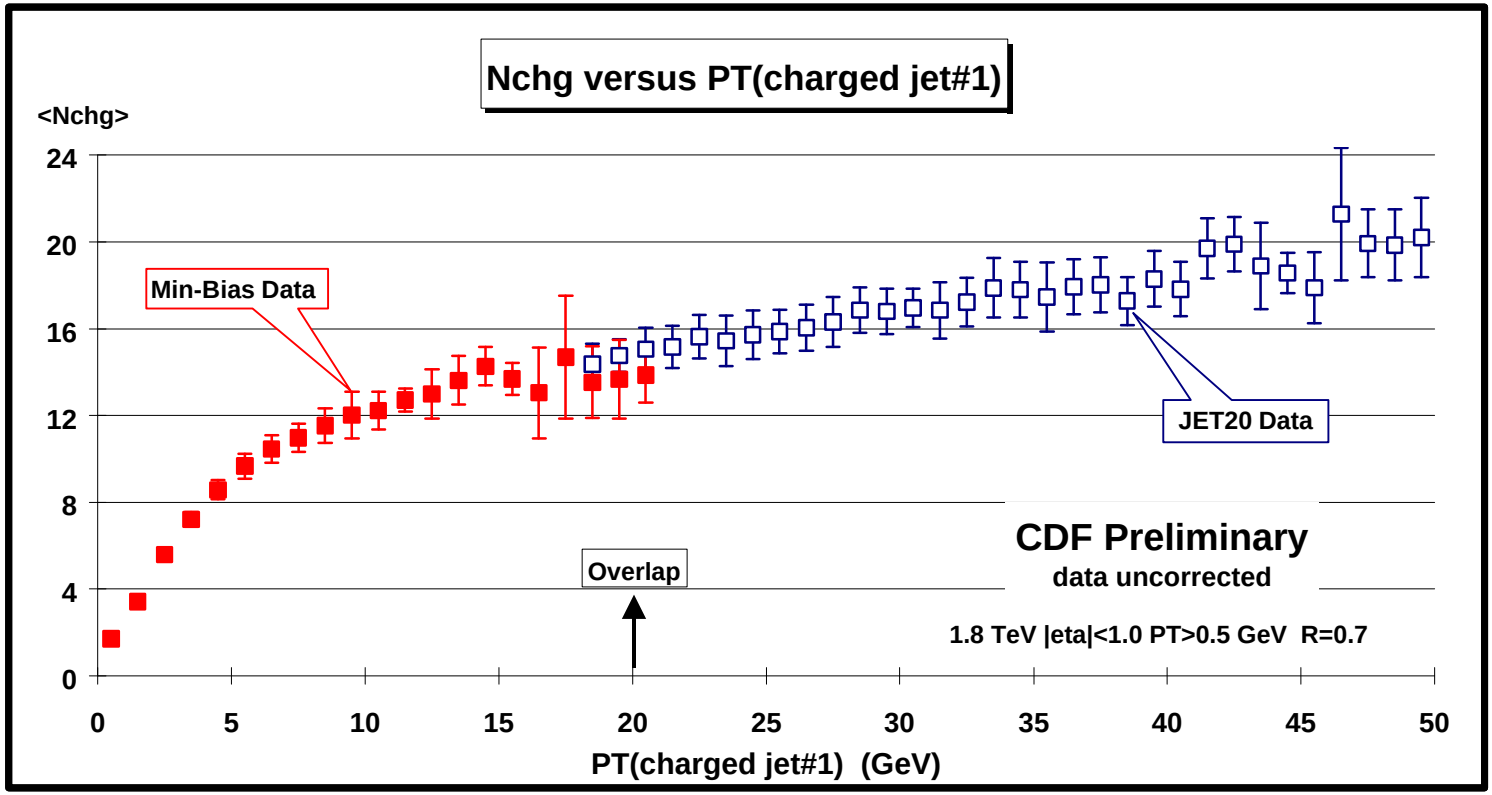
Plot 3: <Nchg> vs PT(charged jet#1):



Plot shows the average number of charged particles (PT > 0.5 GeV, |η| < 1 including jet#1) as a function of the PT of the leading charged jet . The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties.

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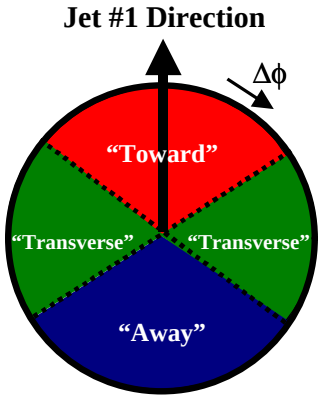
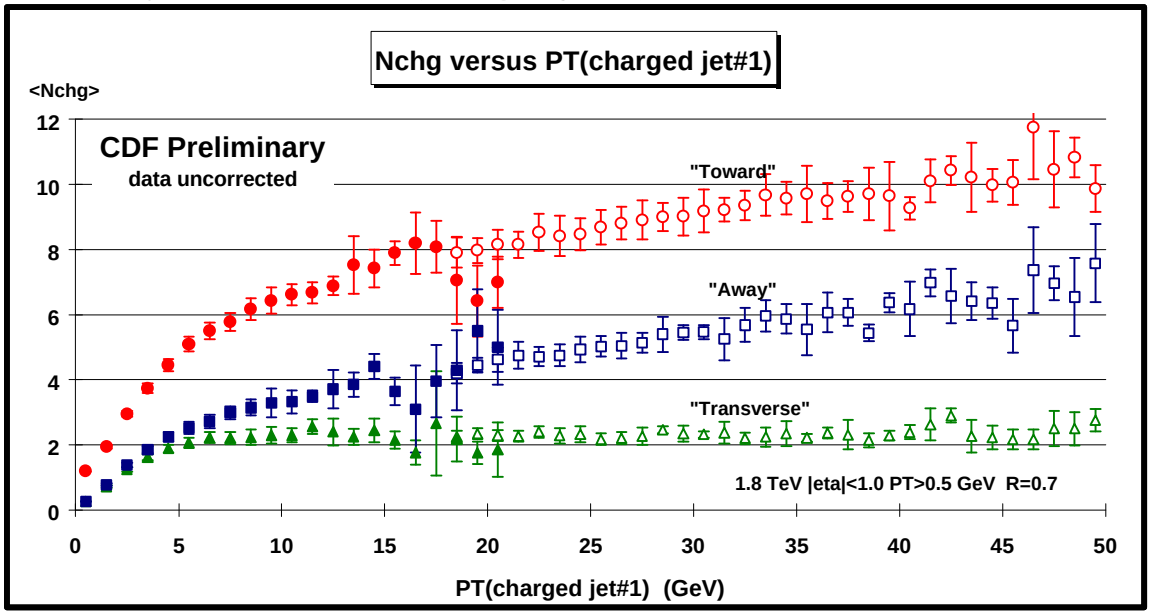
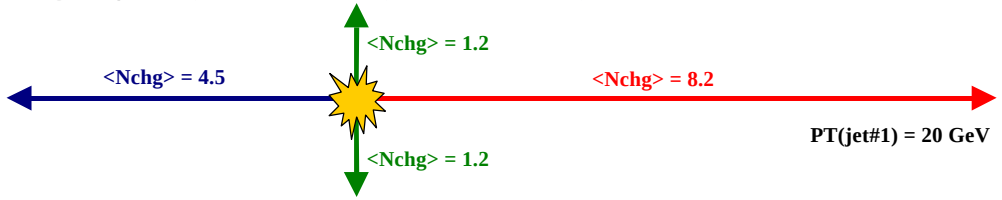
Plot 4: "Toward", "Transverse", "Away" <Nchg> vs PT(charged jet#1):





Plot shows the average number of toward ($|\phi|<60^o$), transverse ($60<|\phi|<120^o$), and away ($|\phi|>120^o$) charged particles (PT > 0.5 GeV, $|\eta| < 1$ including jet#1) as a function of the PT of the leading charged jet. The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties.

Event Shape for PT(charged jet#1) = 20 GeV (uncorrected):



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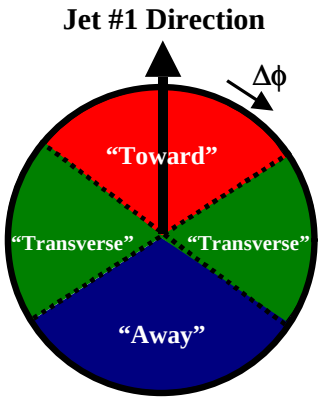
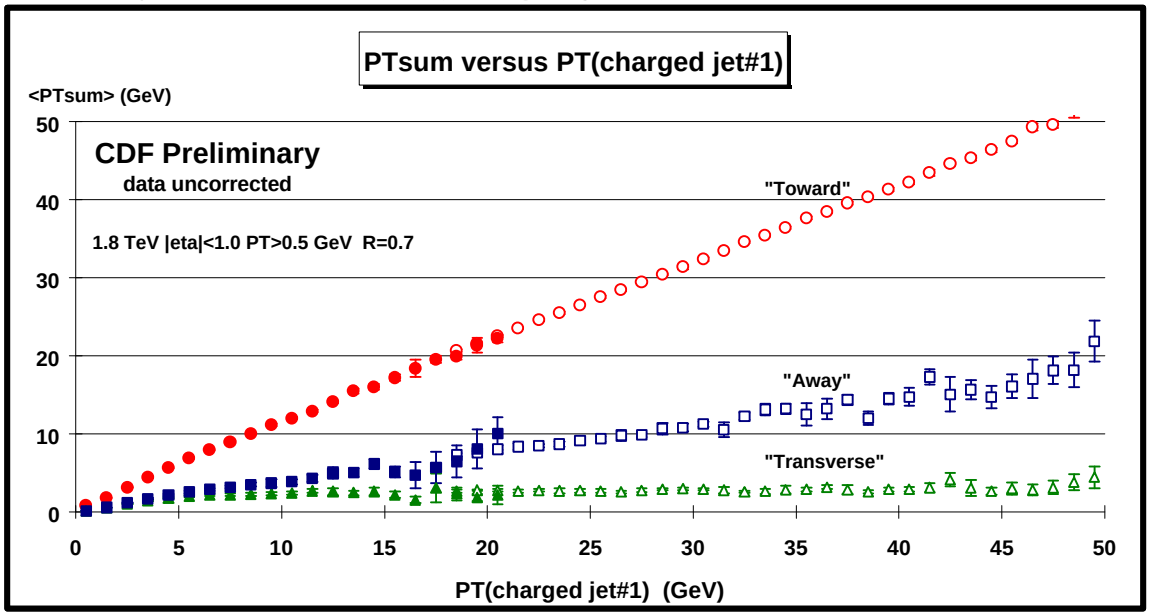
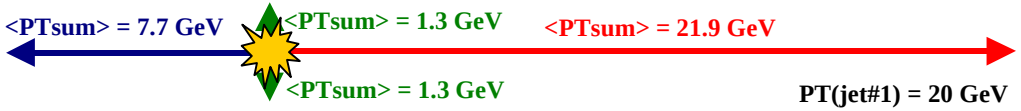
Plot 5: "Toward", "Transverse", "Away" <PTsum> vs PT(charged jet#1):





Plot shows the average PTsum of toward ($|\phi|<60^0$), transverse ($60<|\phi|<120^0$), and away ($|\phi|>120^0$) charged particles (PT > 0.5 GeV, $|\eta| < 1$ including jet#1) as a function of the PT of the leading charged jet. The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties.

Event Shape for PT(charged jet#1) = 20 GeV (uncorrected):



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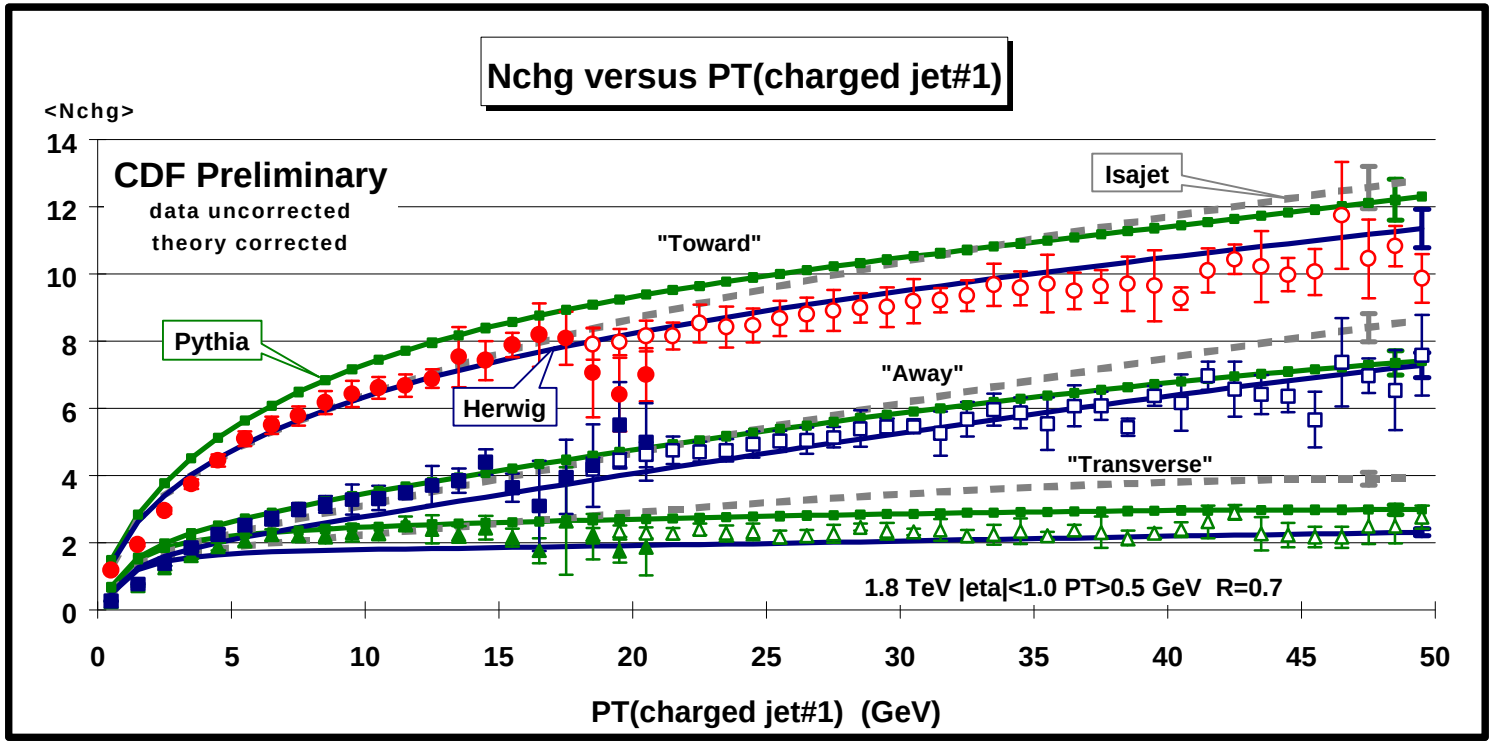
Plot 6: "Toward", "Transverse", "Away" <Nchg> vs PT(charged jet#1):



Plot shows the average number of toward ($|\phi|<60^o$), transverse ($60<|\phi|<120^o$), and away ($|\phi|>120^o$) charged particles (PT > 0.5 GeV, $|\eta| < 1$ including jet#1) as a function of the PT of the leading charged jet. . The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties. The QCD "hard scattering" theory curves (Herwig 5.9, Isajet 7.32, Pythia 6.115) are corrected for the track finding efficiency and have an error (statistical plus systematic) of around 5%.

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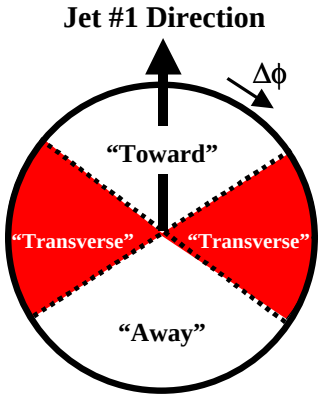
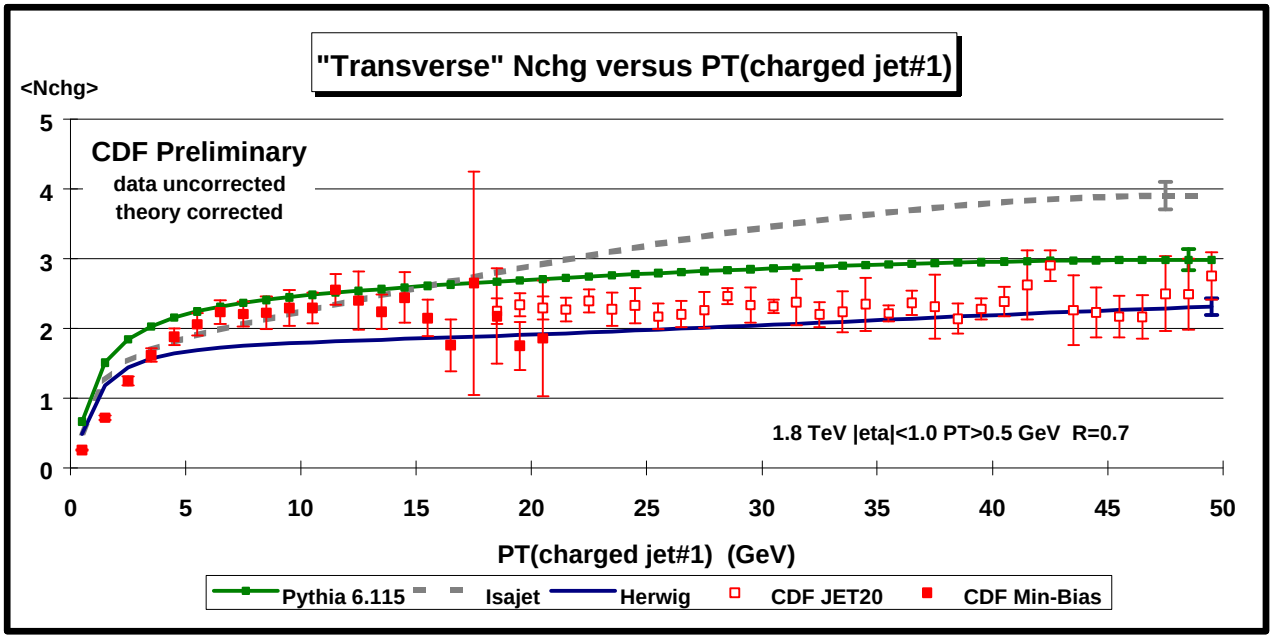
Plot 7: "Transverse" <Nchg> vs PT(charged jet#1):





Plot shows the average number of transverse ($60<|\phi|<120^{0}$) charged particles (PT > 0.5 GeV, $|\eta| < 1$ including jet#1) as a function of the PT of the leading charged jet. . The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties. The QCD "hard scattering" theory curves (Herwig 5.9, Isajet 7.32, Pythia 6.115) are corrected for the track finding efficiency and have an error (statistical plus systematic) of around 5%.

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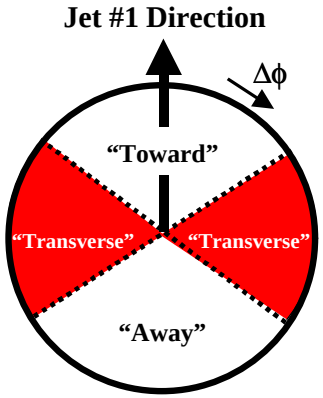
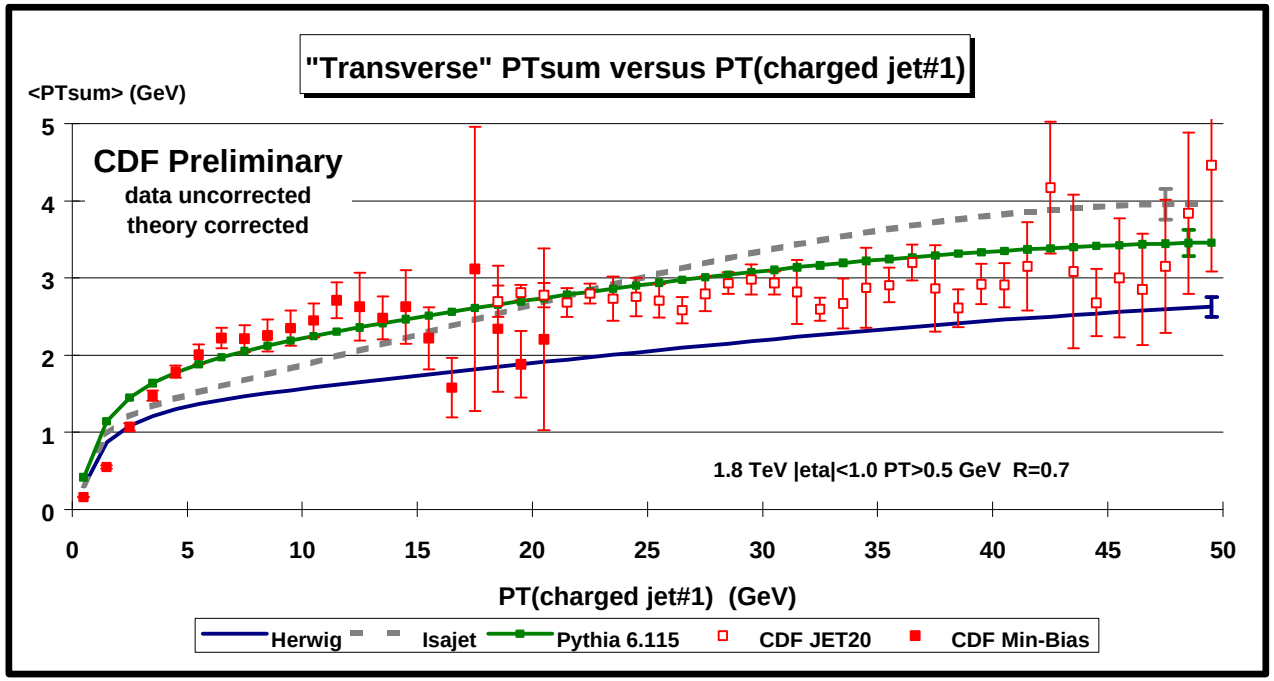
Plot 8: "Transverse" <PTsum> vs PT(charged jet#1):





Plot shows the average PTsum of transverse ($60<|\phi|<120^0$) charged particles (PT > 0.5 GeV, $|\eta| < 1$ including Jet#1) as a function of the PT of the leading charged jet. . The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties. The QCD "hard scattering" theory curves (Herwig 5.9, Isajet 7.32, Pythia 6.115) are corrected for the track finding efficiency and have an error (statistical plus systematic) of around 5%.

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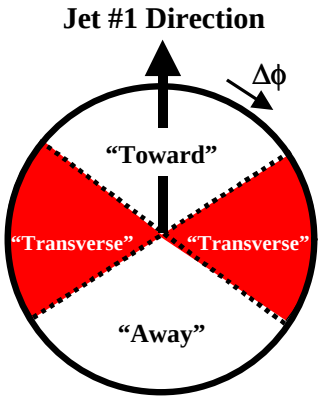
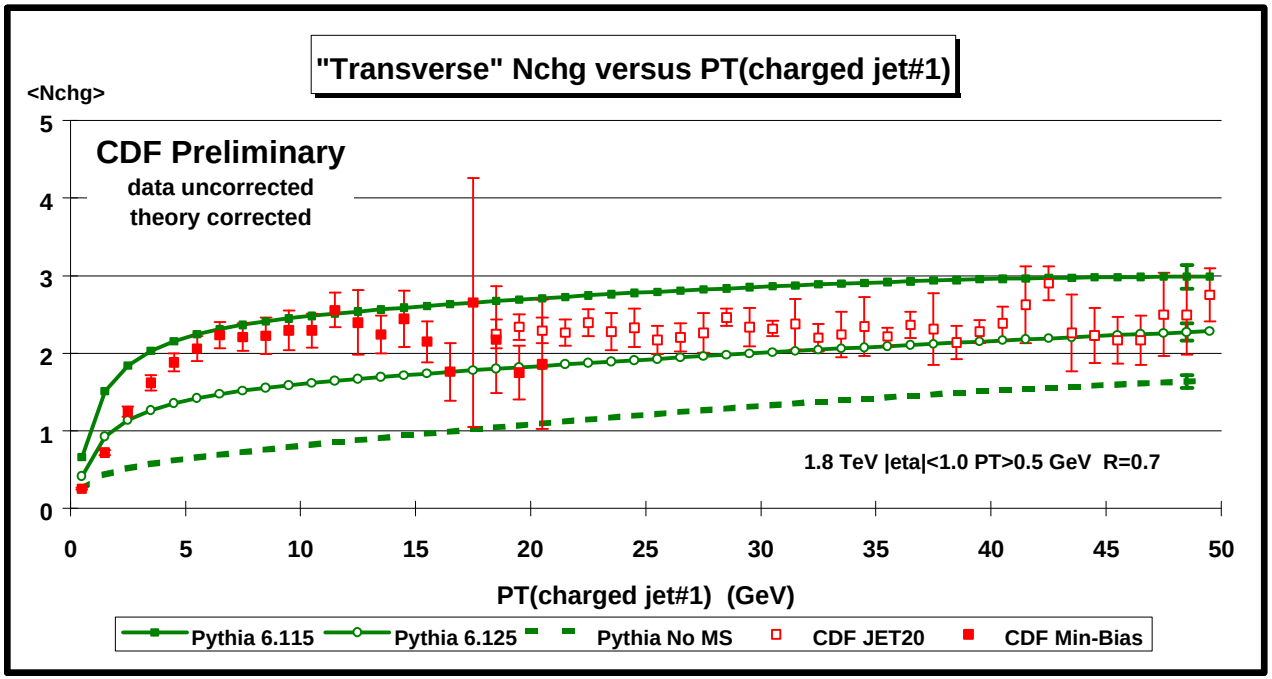
Plot 9: "Transverse" <Nchg> vs PT(charged jet#1):





Plot shows the average number of transverse ($60<|\phi|<120^0$) charged particles (PT > 0.5 GeV, $|\eta| < 1$ including jet#1) as a function of the PT of the leading charged jet. . The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties. The QCD "hard scattering" theory curves (Pythia 6.115, Pythia 6.125, Pythia with no multiple parton scattering) are corrected for the track finding efficiency and have an error (statistical plus systematic) of around 5%.

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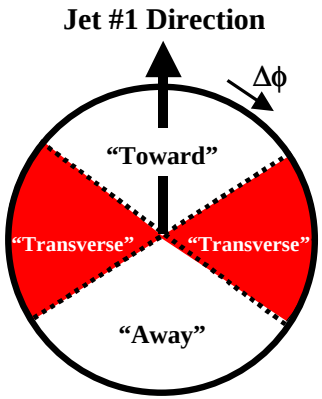
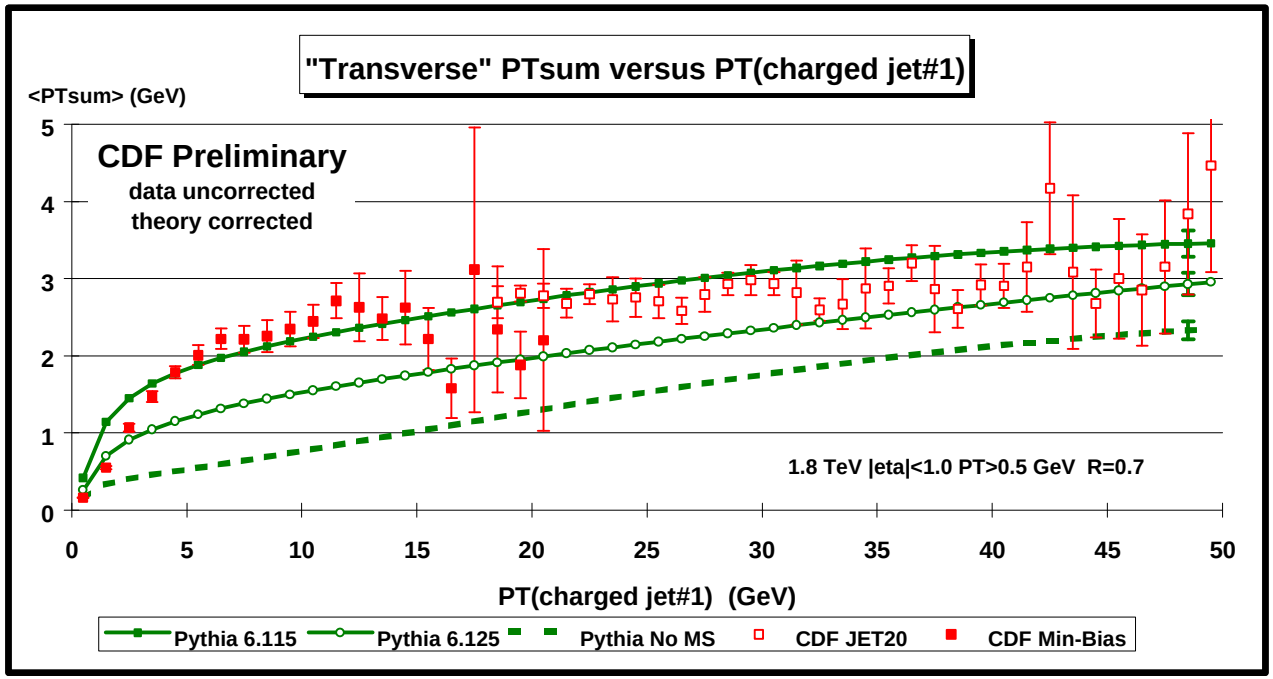
Plot 10: "Transverse" <PTsum> vs PT(charged jet#1):





Plot shows the average PTsum of transverse ($60<|\phi|<120^0$) charged particles (PT > 0.5 GeV, $|\eta| < 1$ including jet#1) as a function of the PT of the leading charged jet. . The errors on the (uncorrected) data include both statistical and correlated systematic uncertainties. The QCD "hard scattering" theory curves (Pythia 6.115, Pythia 6.125, Pythia with no multiple parton scattering) are corrected for the track finding efficiency and have an error (statistical plus systematic) of around 5%.