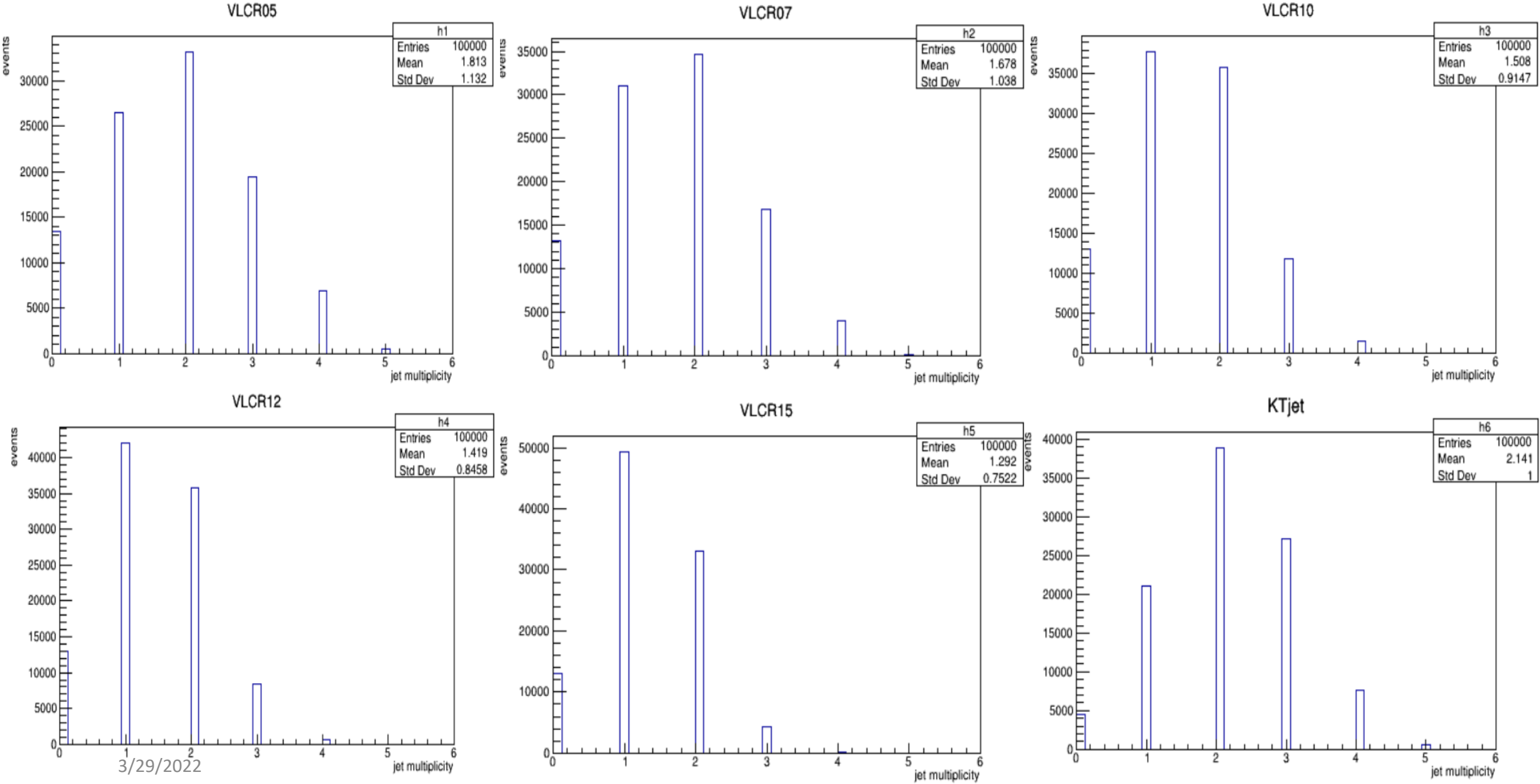


Inclusive and Exclusive Jet Clustering Comparisons

Mayuri Kawale

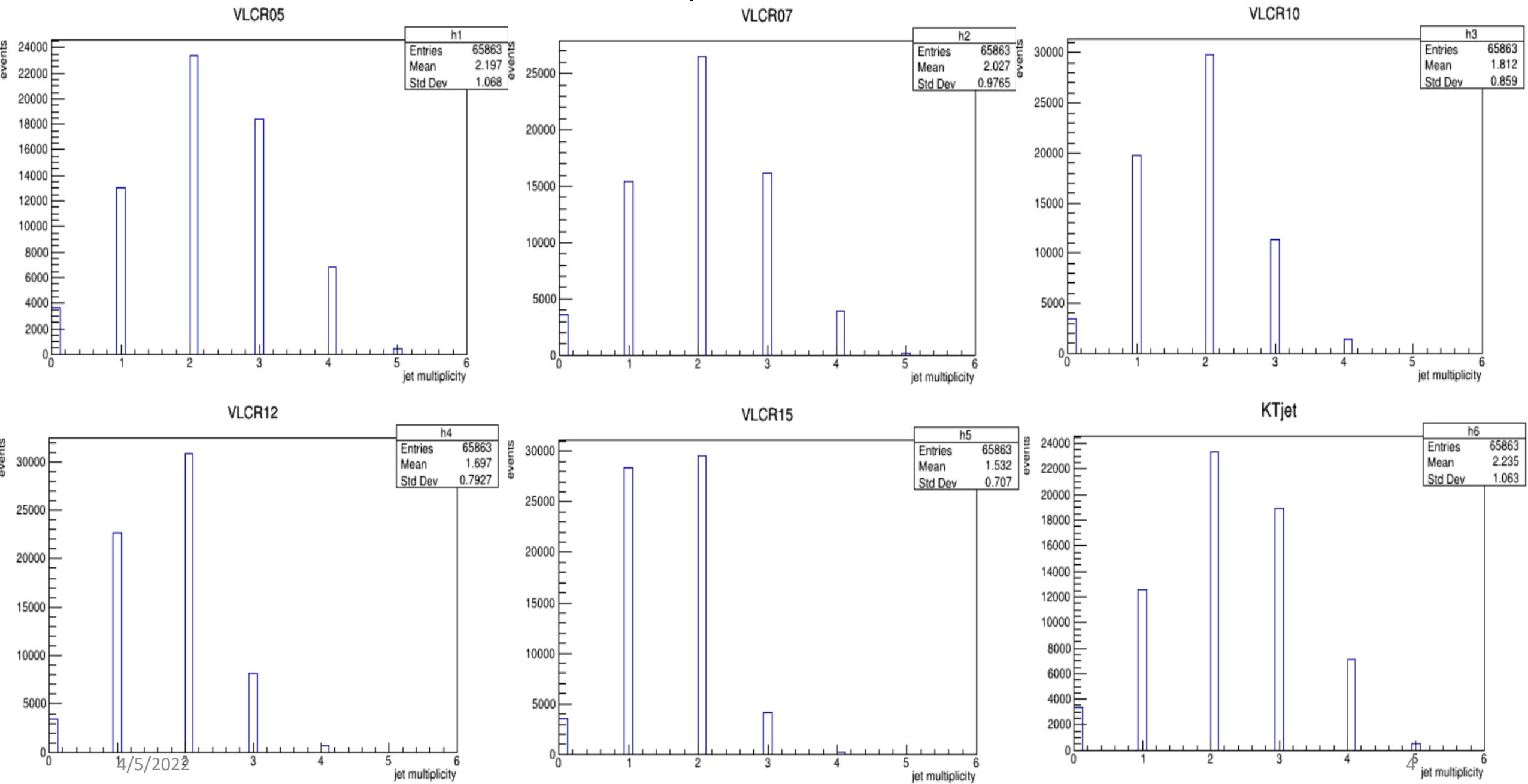
Inclusive Jet multiplicities (no selections applied)



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Hadronic state selection: $n_{\text{leptons}}=0$

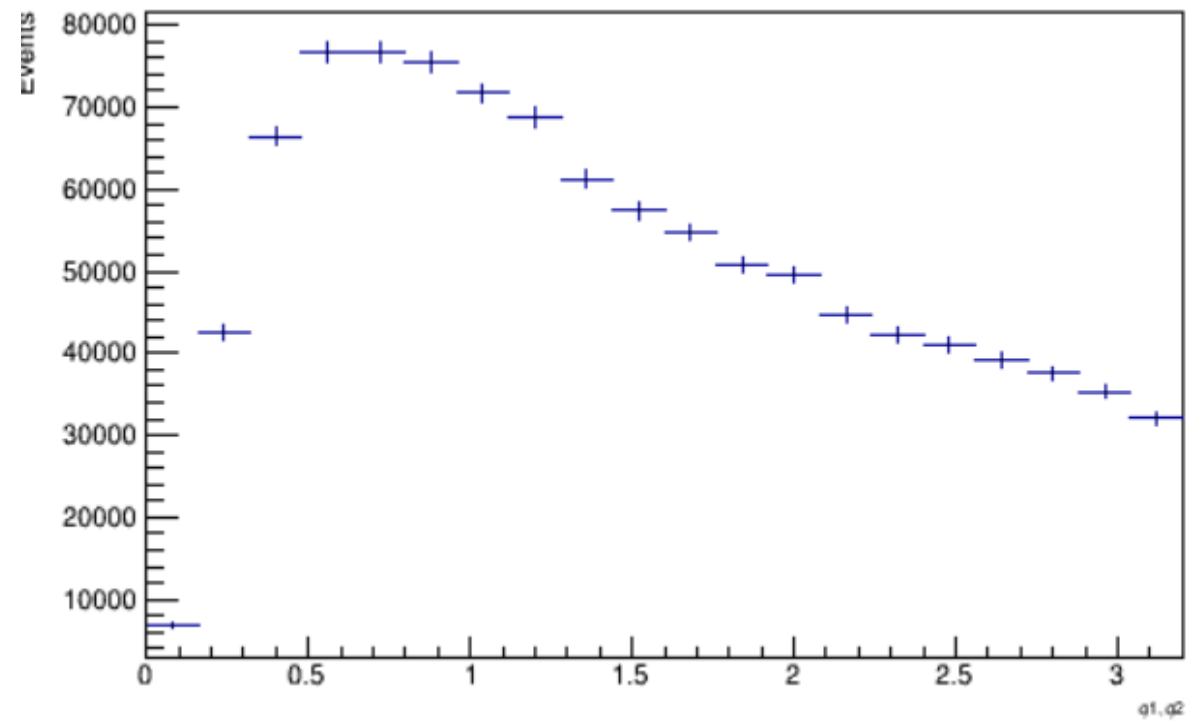
Inclusive Jet multiplicities for hadronic states



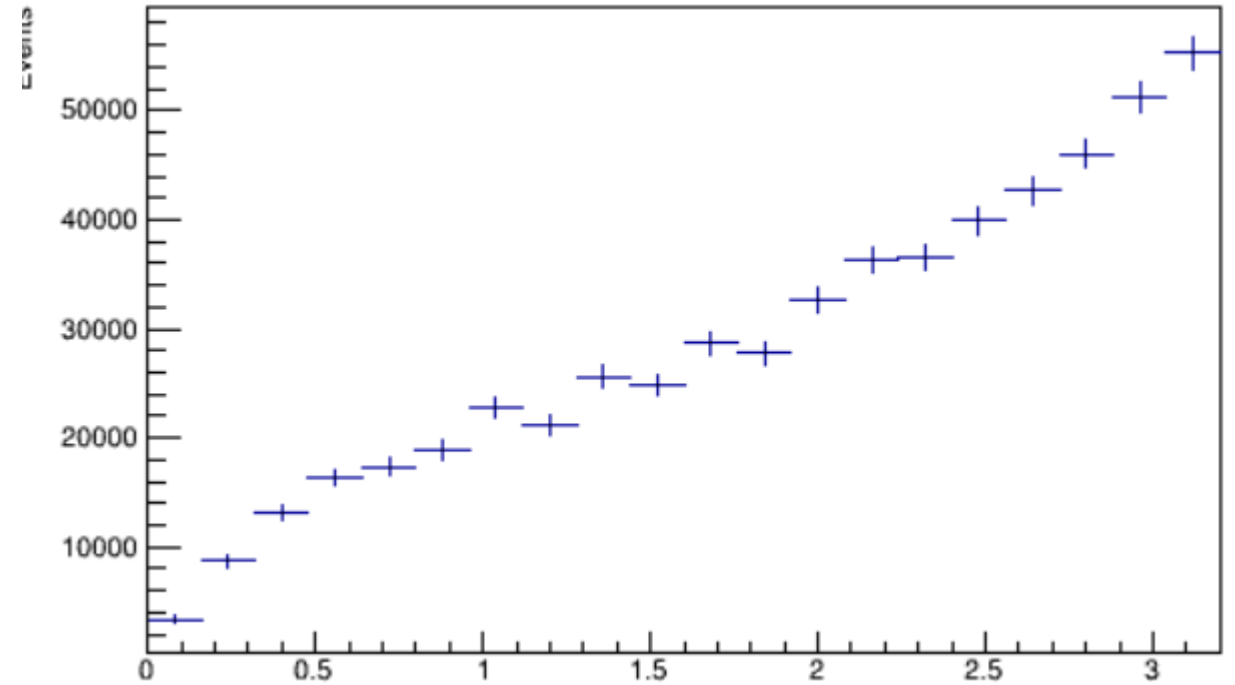
Truth-level plots

These plots are corresponding to the hadronic decays of W bosons.

$dR(q1,q2)$ of a W boson

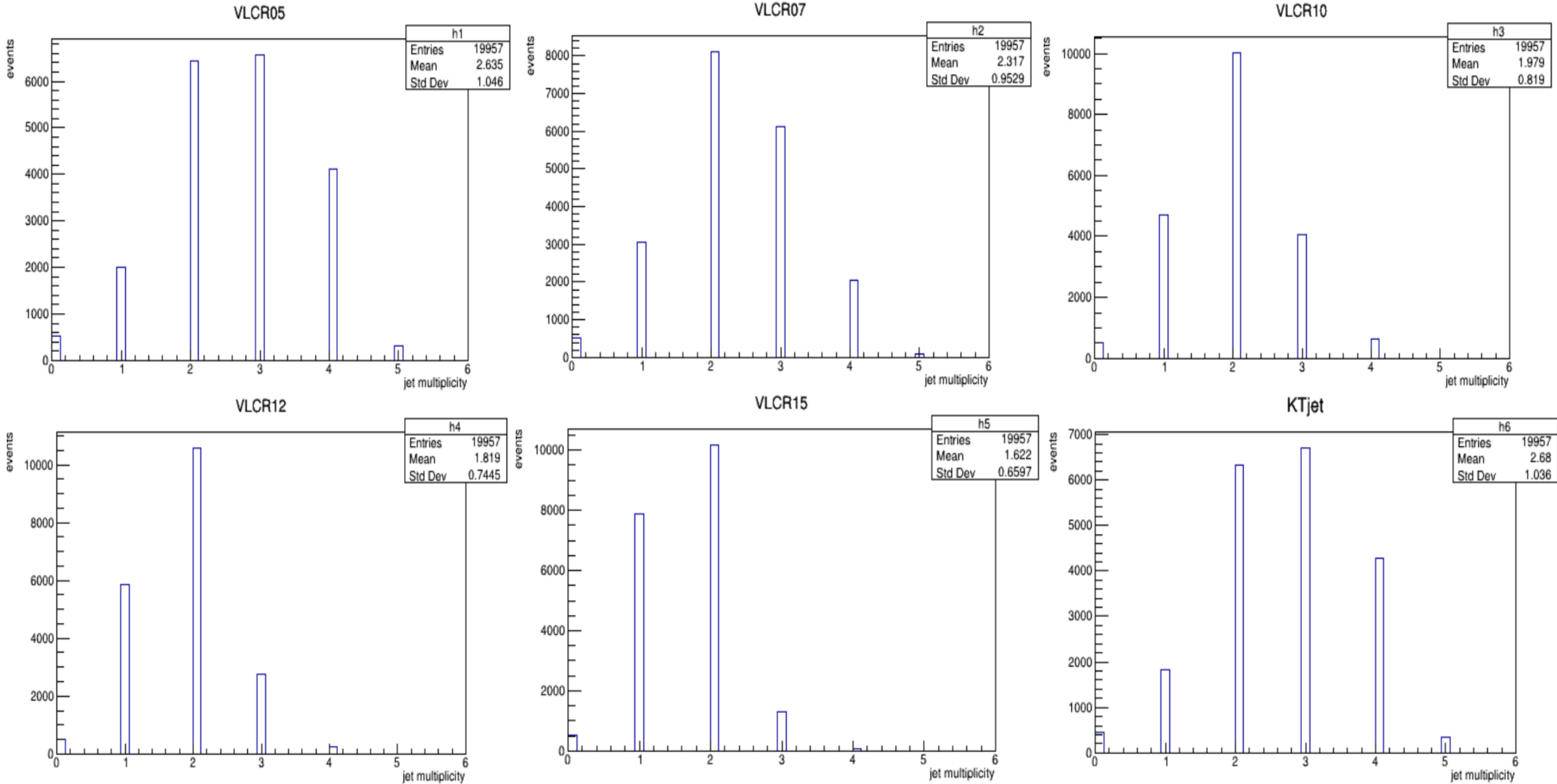


$dR(W,W)$

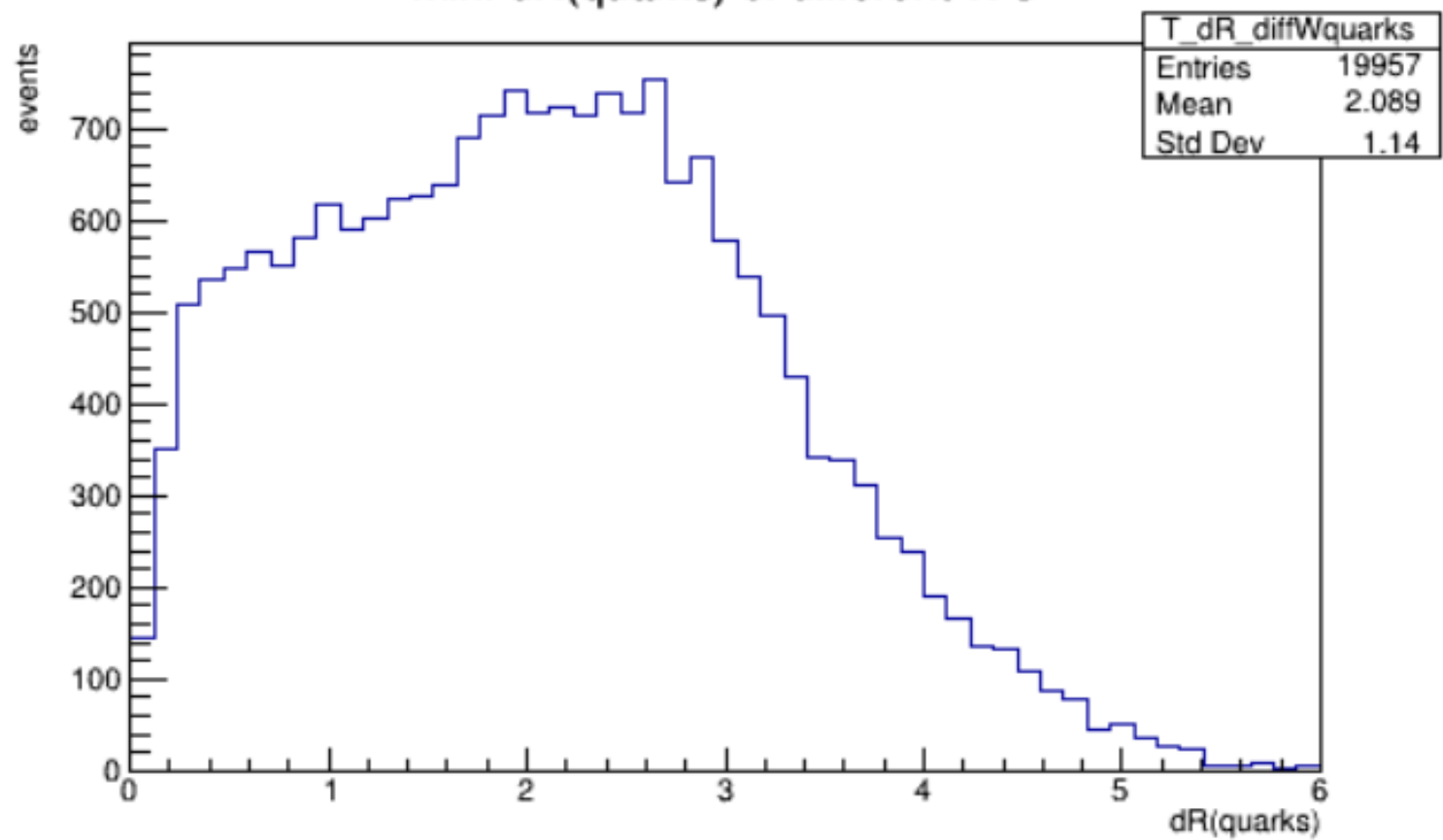


Selections at truth level: each quark has $p_T > 30 \text{ GeV}$ and $|\eta| < 2.5$

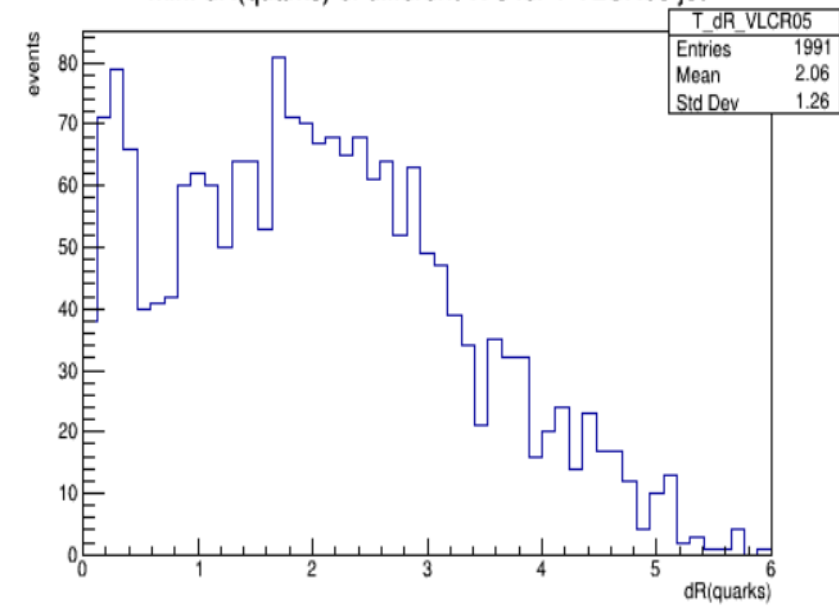
Inclusive Jet multiplicities for hadronic states, quarks($p_T > 30$, $|\eta| < 2.5$)



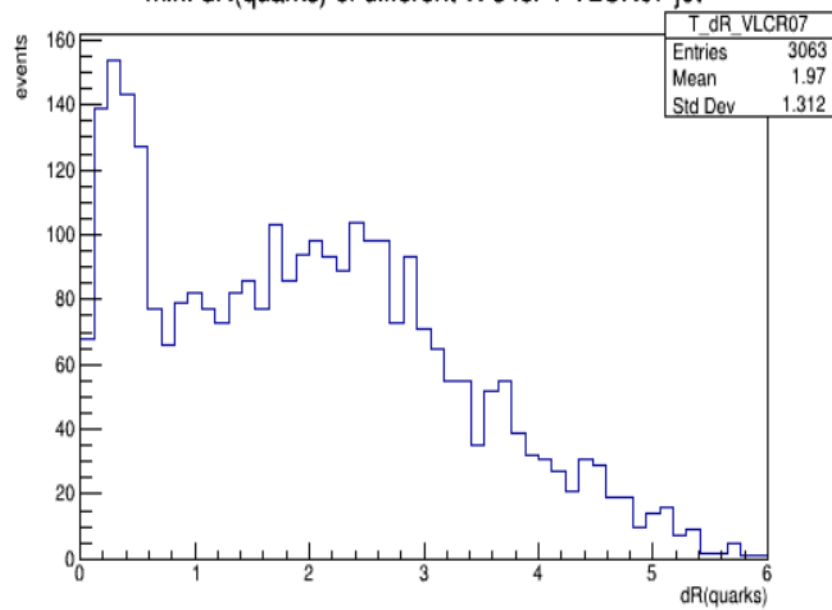
min. dR(quarks) of different W's



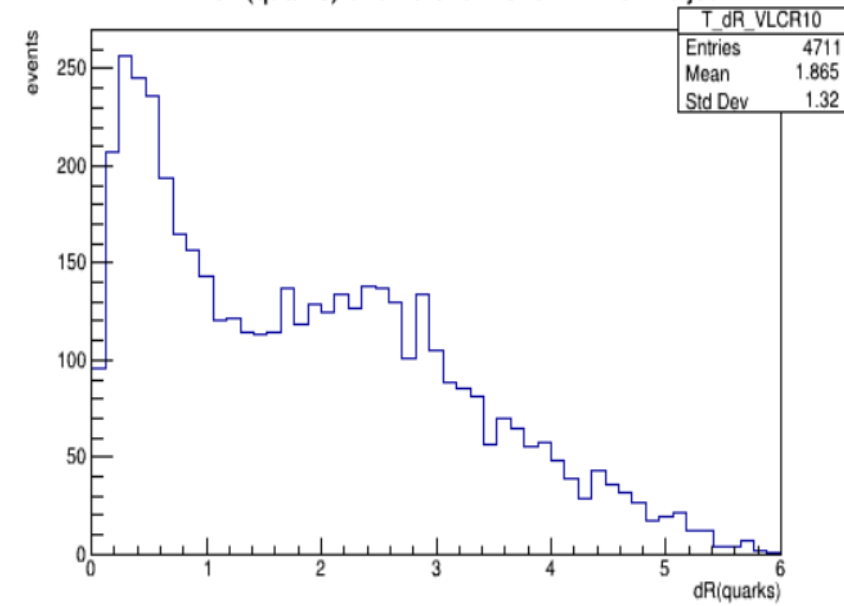
min. dR(quarks) of different W's for 1 VLCR05 jet



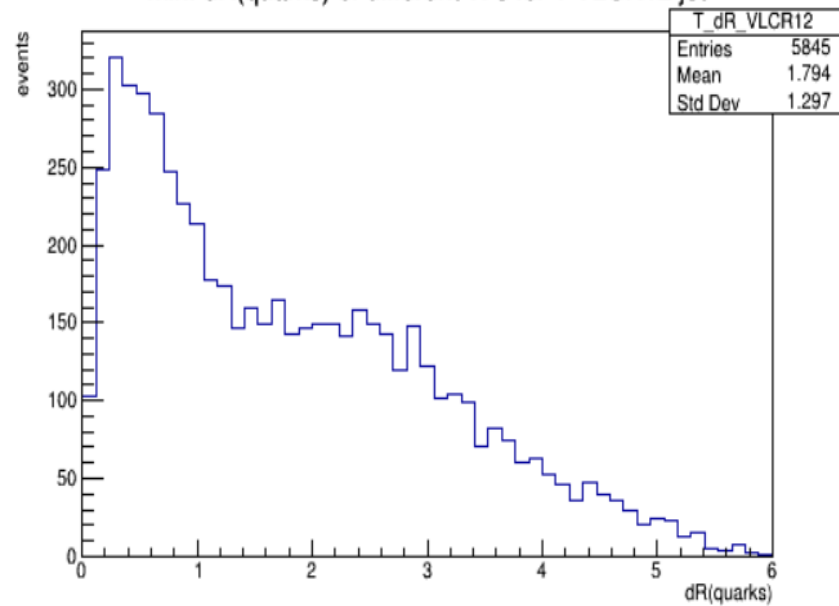
min. dR(quarks) of different W's for 1 VLCR07 jet



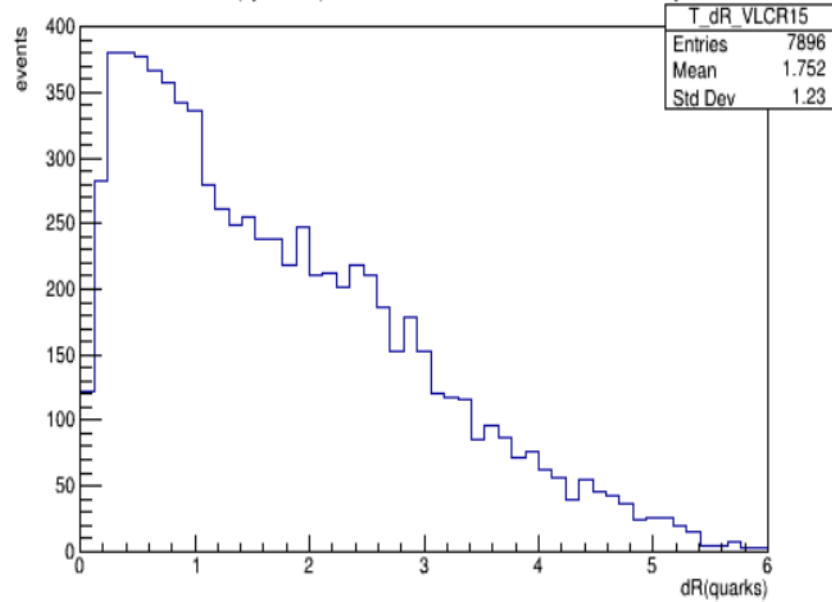
min. dR(quarks) of different W's for 1 VLCR10 jet



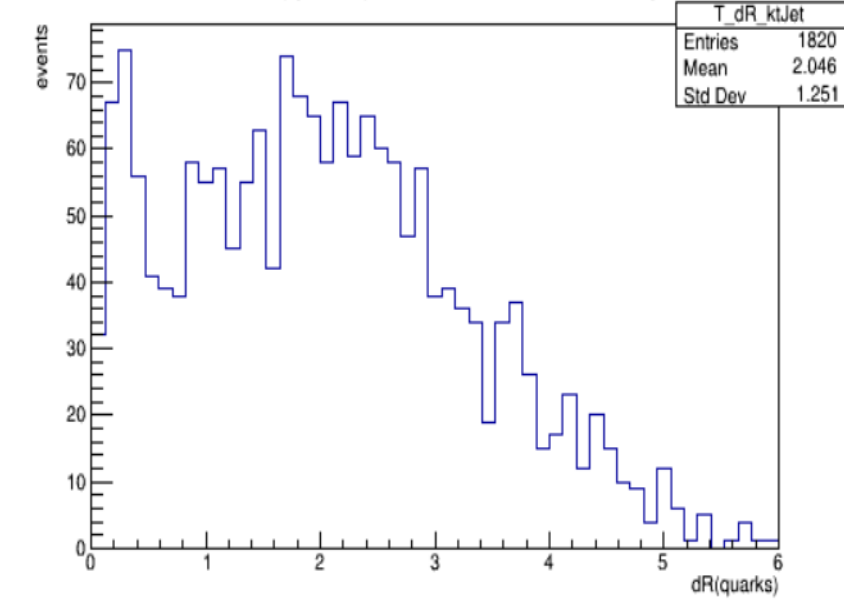
min. dR(quarks) of different W's for 1 VLCR12 jet



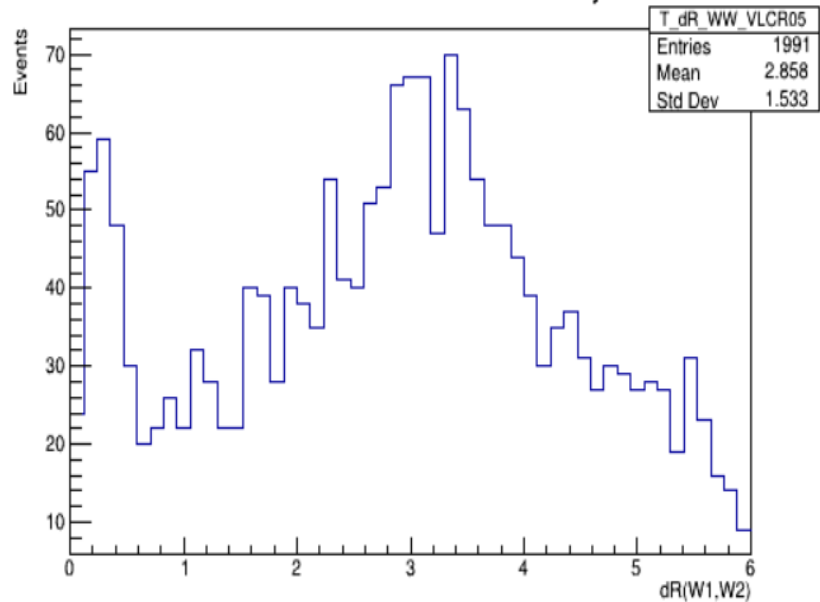
min. dR(quarks) of different W's for 1 VLCR15 jet



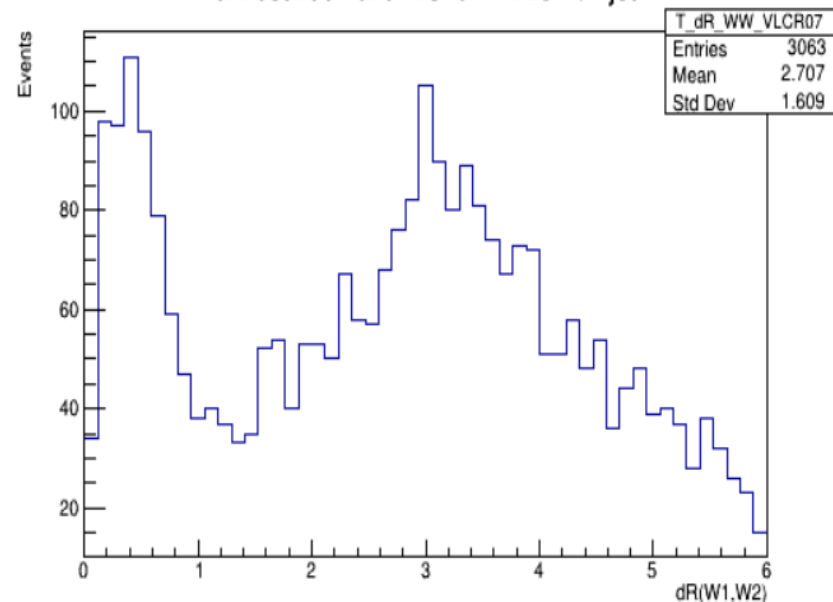
min. dR(quarks) of different W's for 1 kT jet



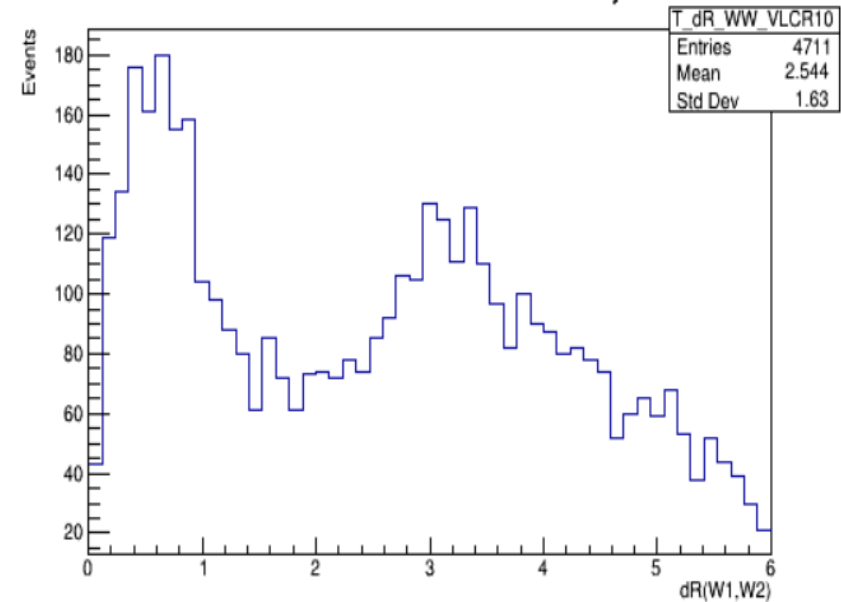
dR between two Ws for 1 VLCR05 jet



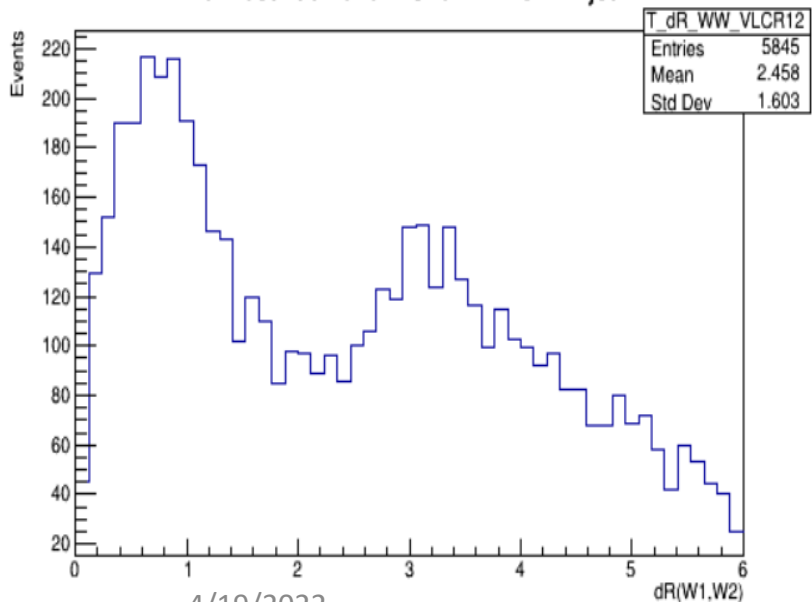
dR between two Ws for 1 VLCR07 jet



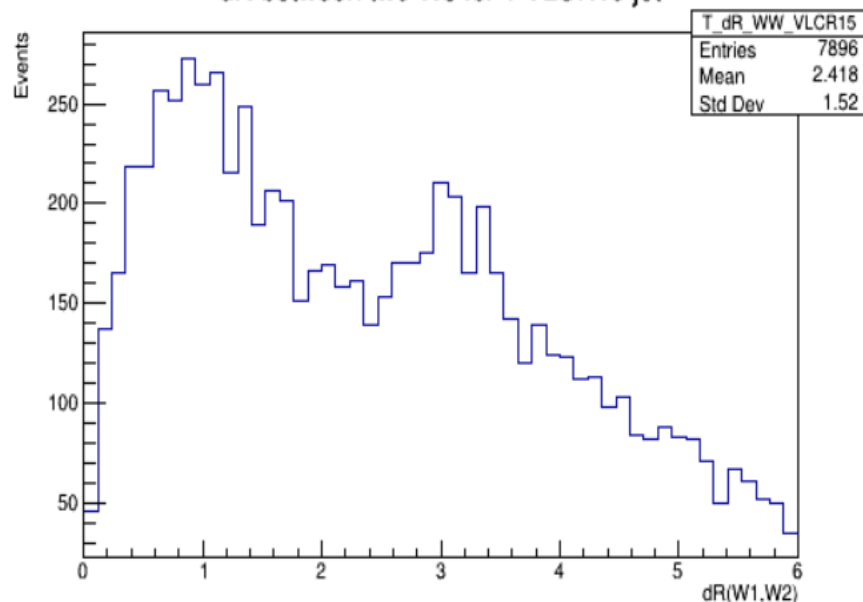
dR between two Ws for 1 VLCR10 jet



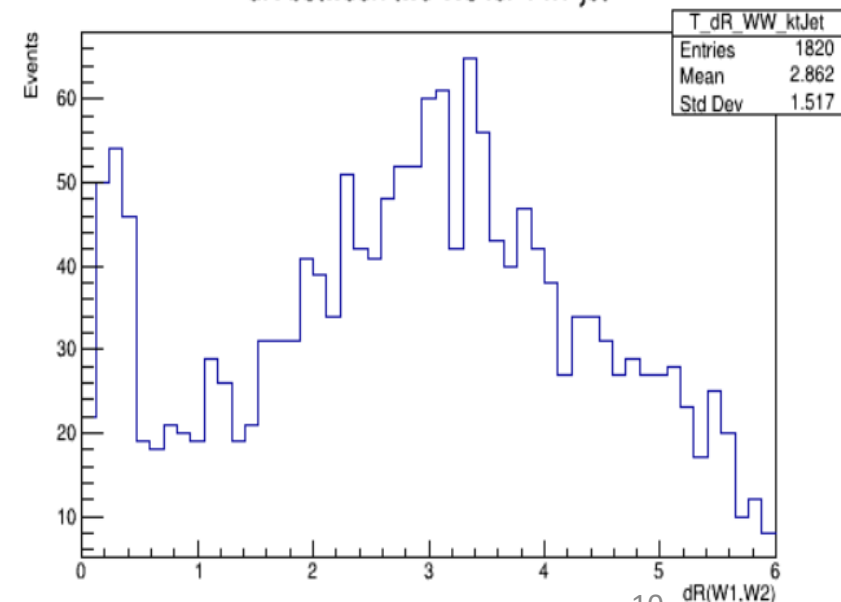
dR between two Ws for 1 VLCR12 jet



dR between two Ws for 1 VLCR15 jet



dR between two Ws for 1 kT jet



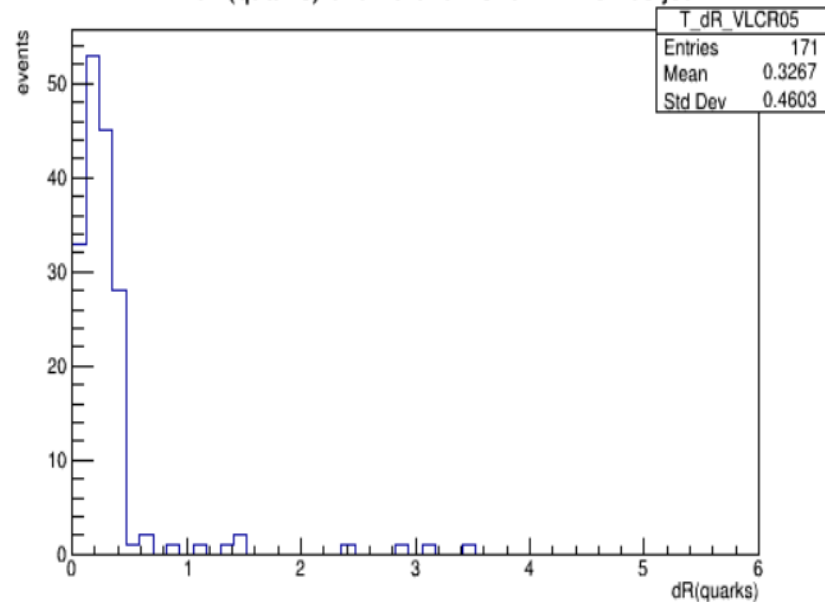
4/19/2022

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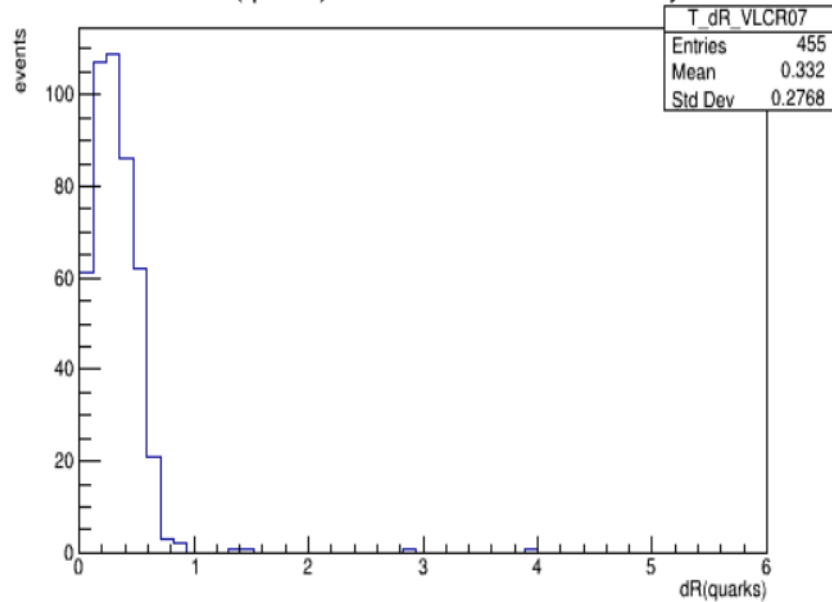
Problems with previous graphs

- Condition to select only hadronic states at truth level wasn't applied.
- Selection on quark eta was applied only for positive eta. So, there were quarks with eta beyond -2.5
- Plots after these corrections are shown in next three slides.

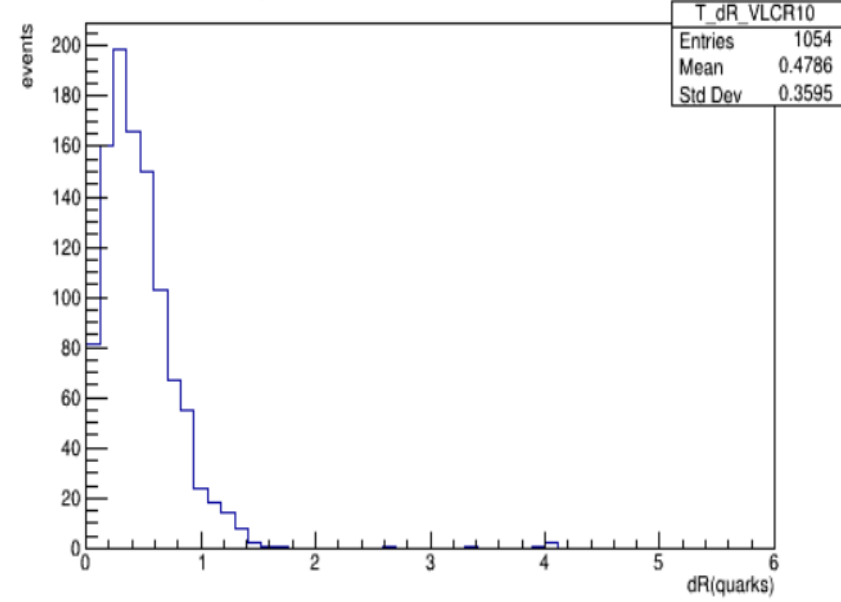
min. dR(quarks) of different Ws for 1 VLCR05 jet



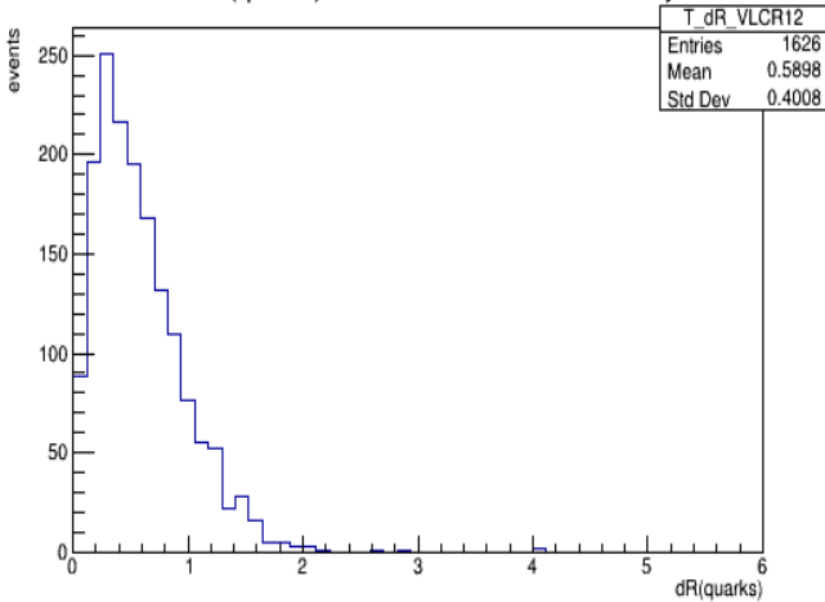
min. dR(quarks) of different Ws for 1 VLCR07 jet



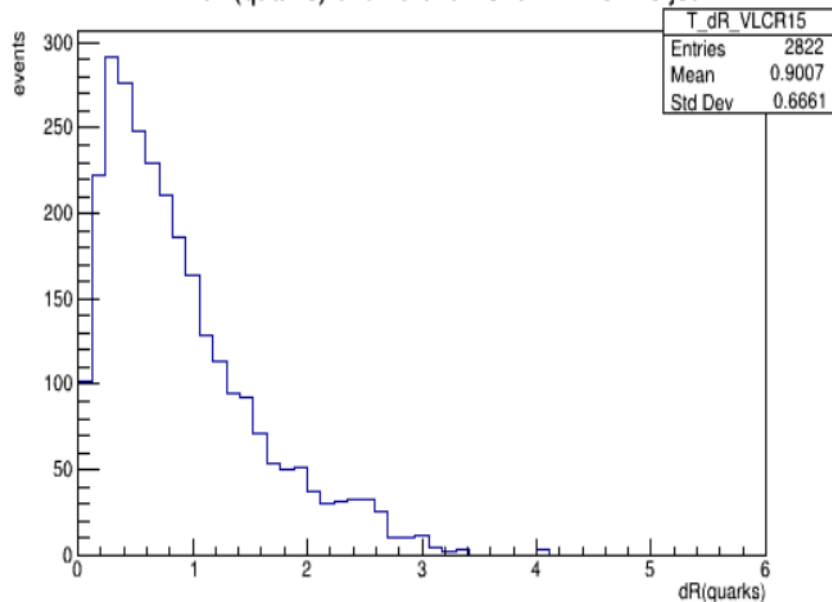
min. dR(quarks) of different Ws for 1 VLCR10 jet



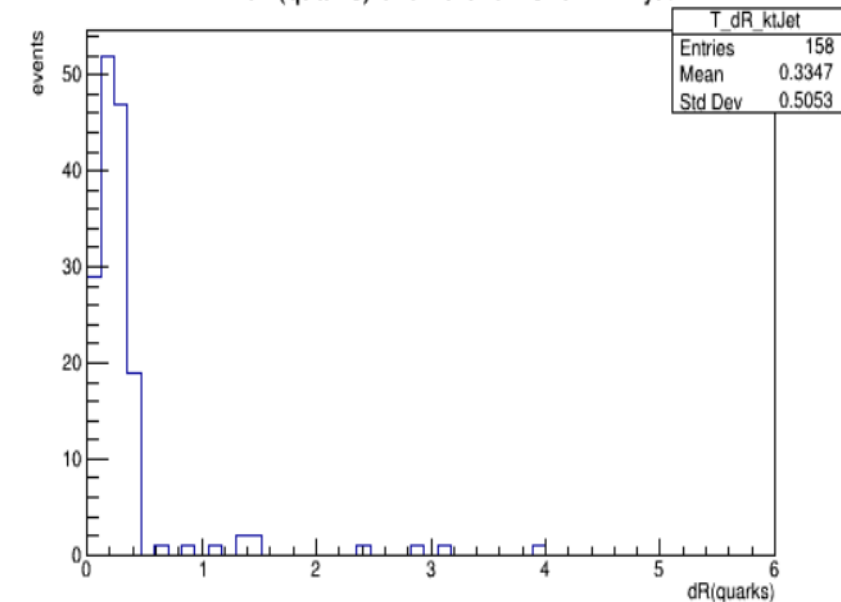
min. dR(quarks) of different Ws for 1 VLCR12 jet



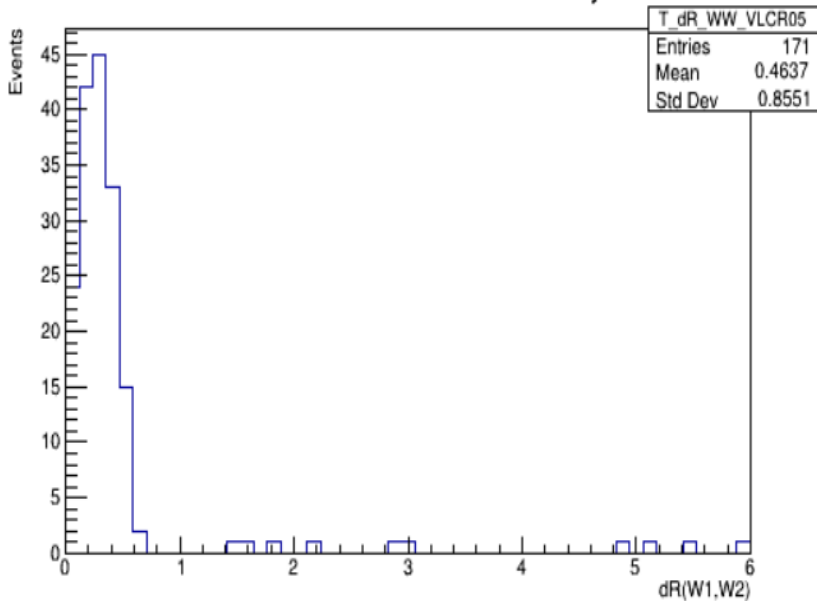
min. dR(quarks) of different Ws for 1 VLCR15 jet



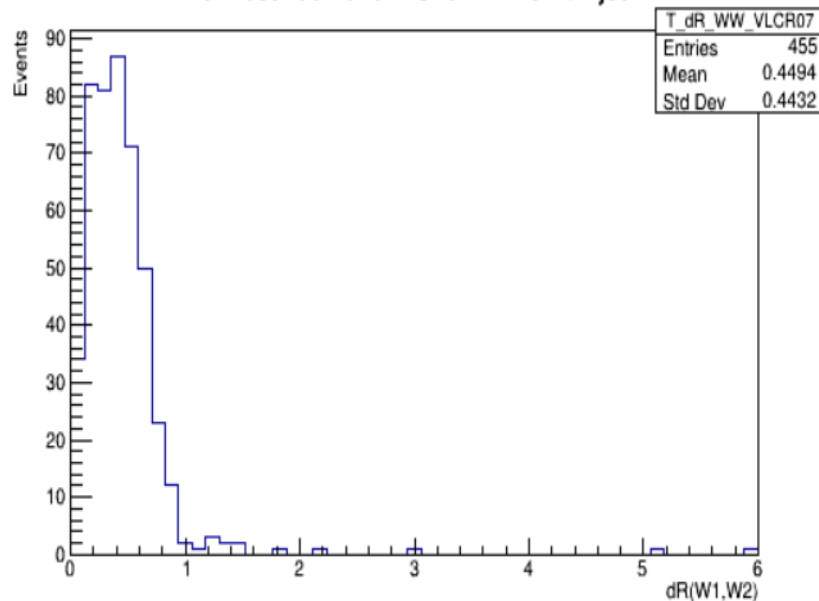
min. dR(quarks) of different Ws for 1 kT jet



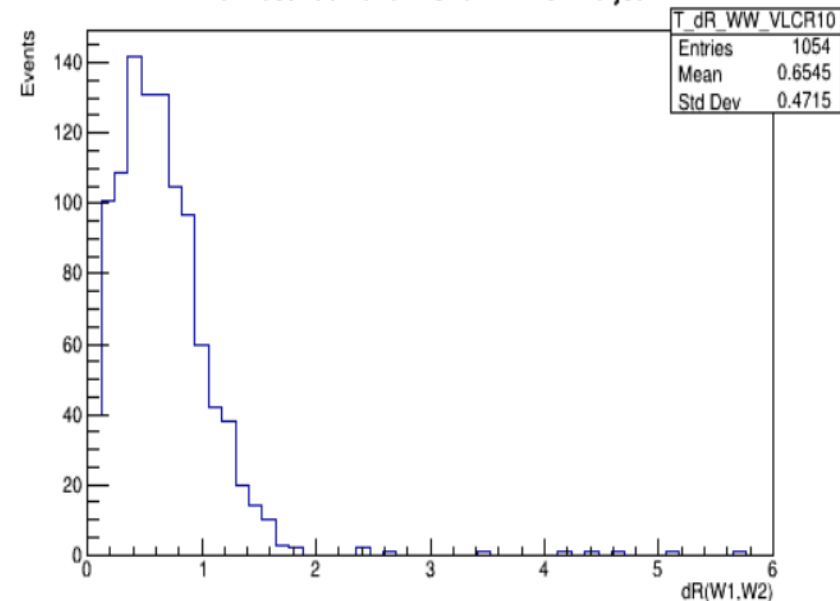
dR between two Ws for 1 VLCR05 jet



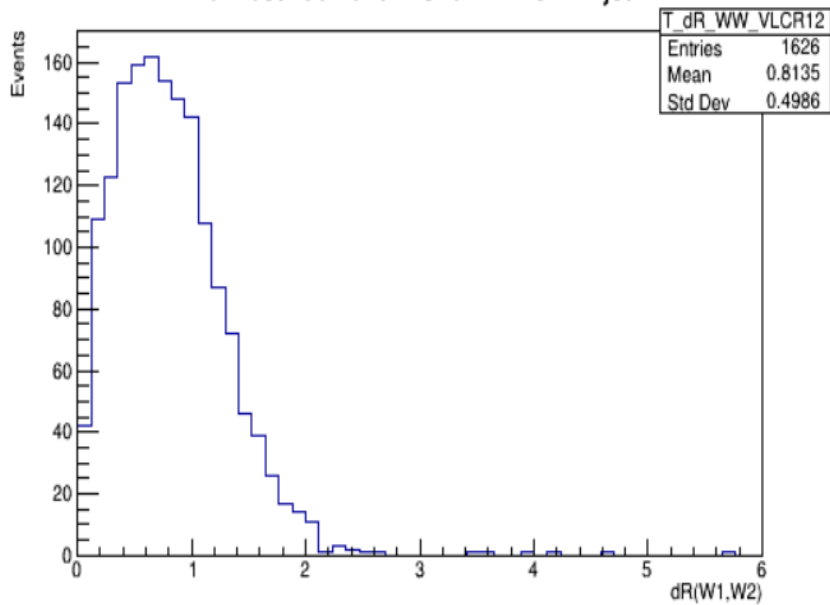
dR between two Ws for 1 VLCR07 jet



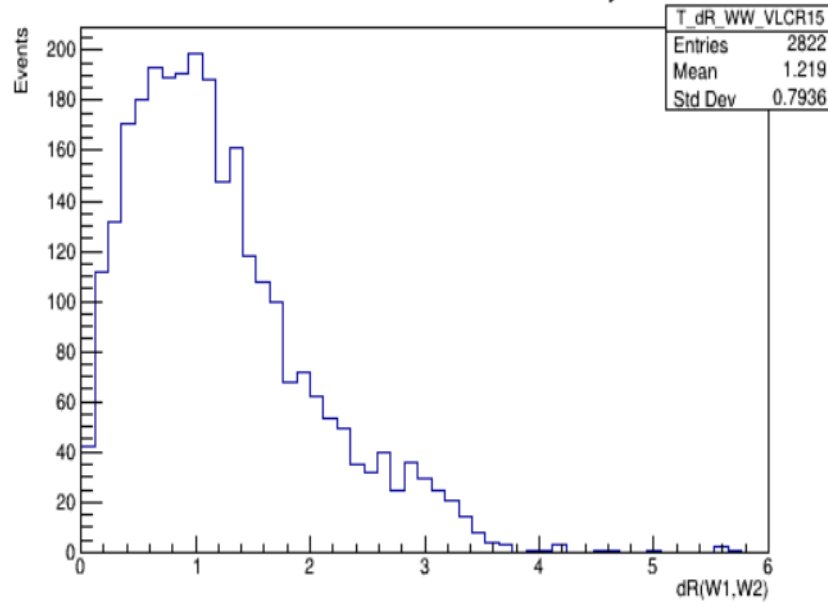
dR between two Ws for 1 VLCR10 jet



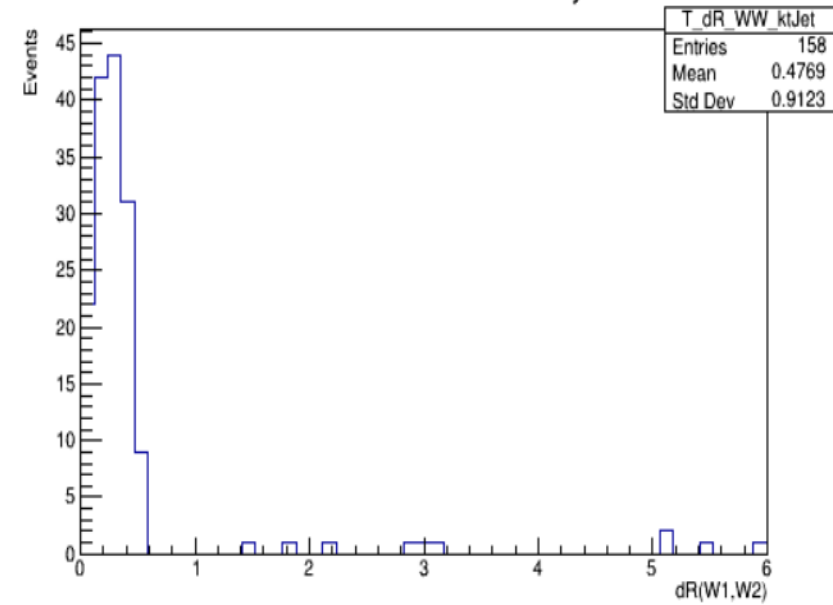
dR between two Ws for 1 VLCR12 jet



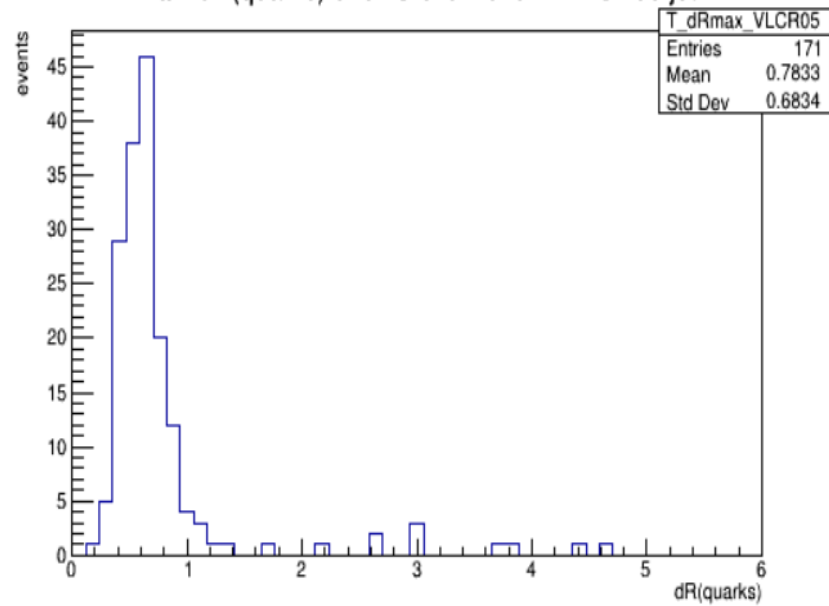
dR between two Ws for 1 VLCR15 jet



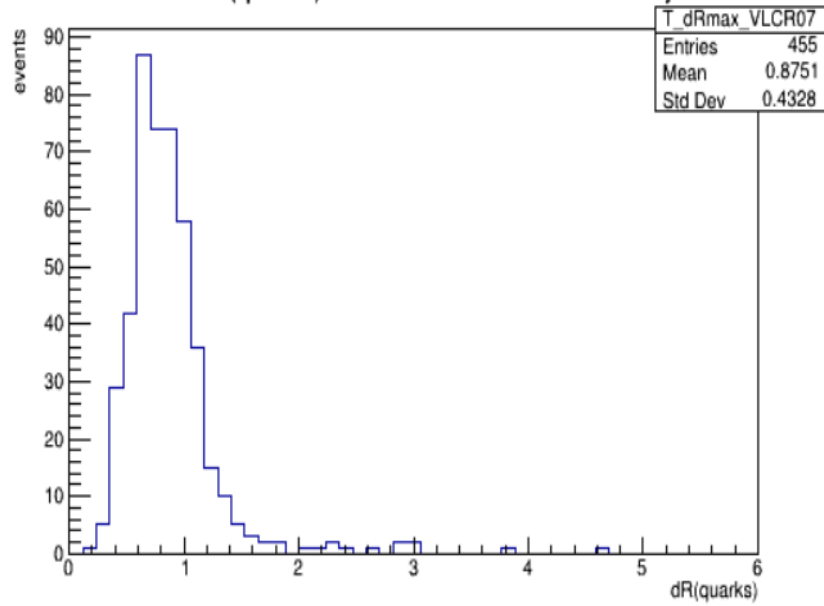
dR between two Ws for 1 kT jet



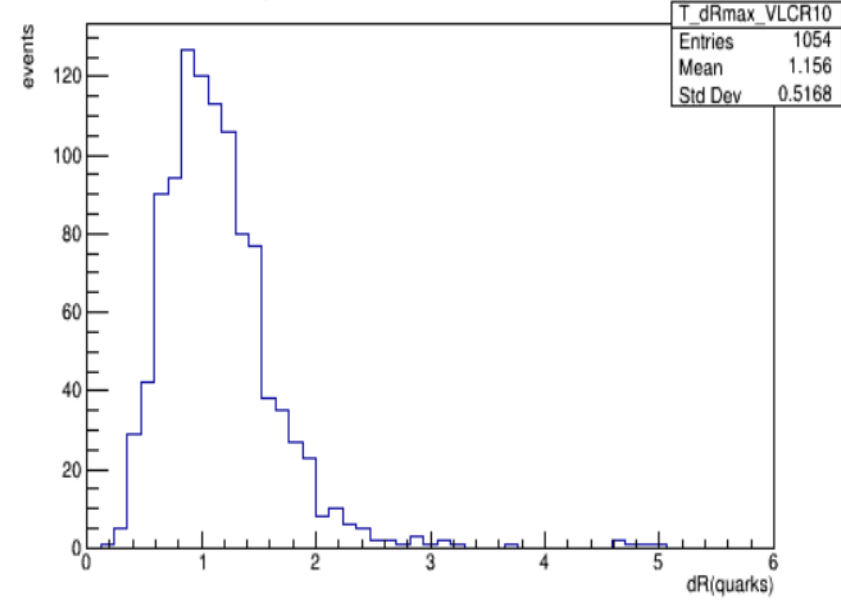
max. dR(quarks) of different Ws for 1 VLCR05 jet



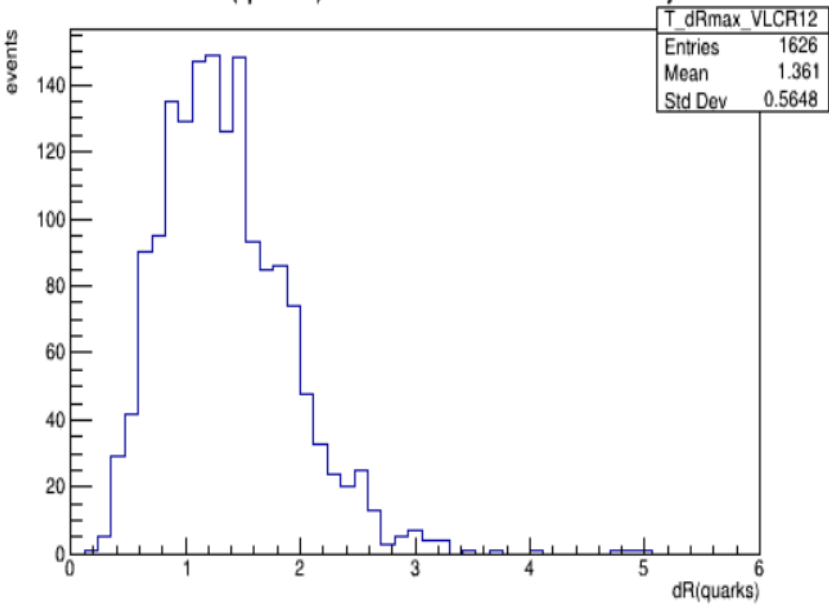
max. dR(quarks) of different Ws for 1 VLCR07 jet



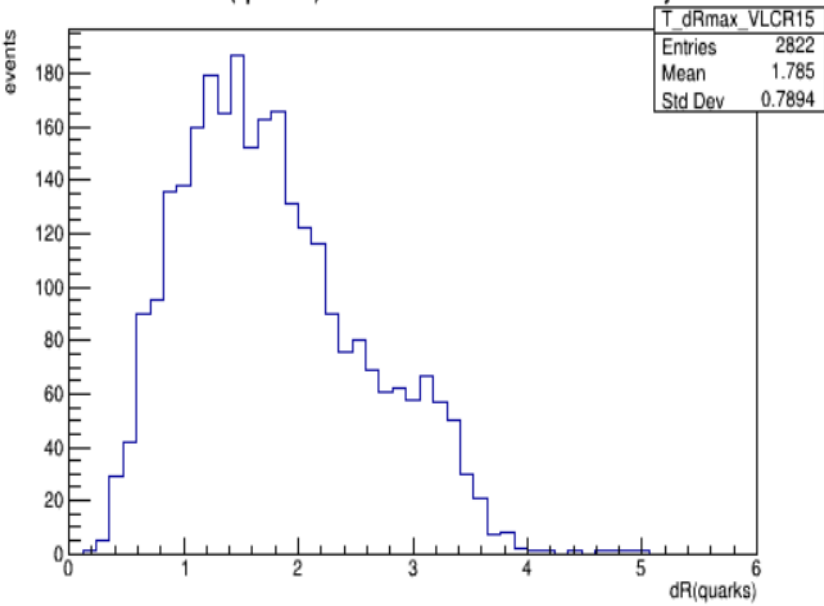
max. dR(quarks) of different Ws for 1 VLCR10 jet



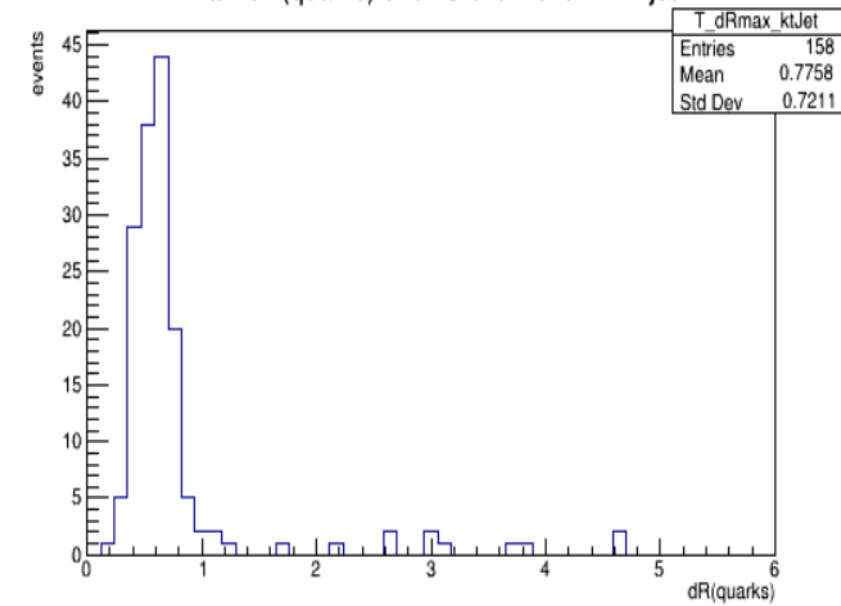
max. dR(quarks) of different Ws for 1 VLCR12 jet

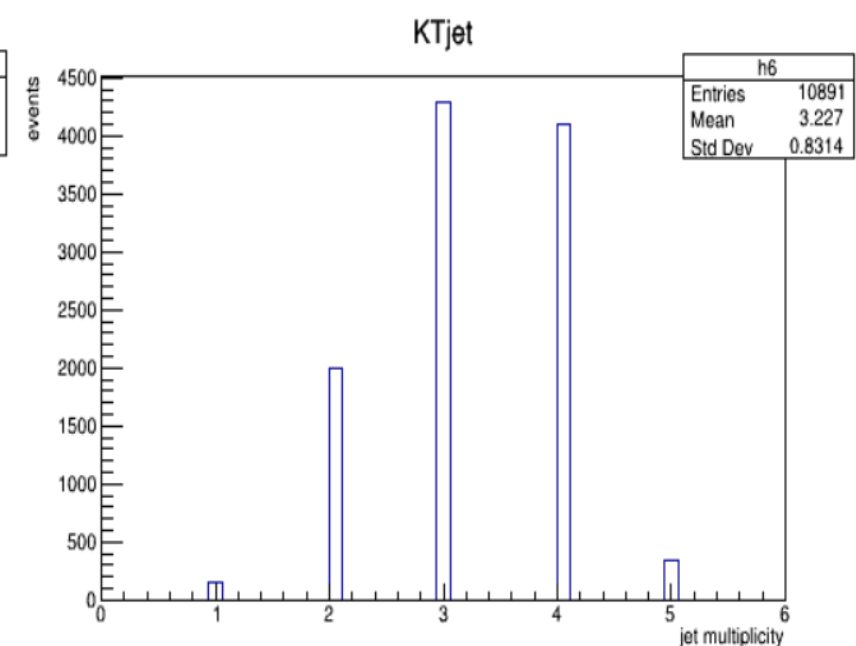
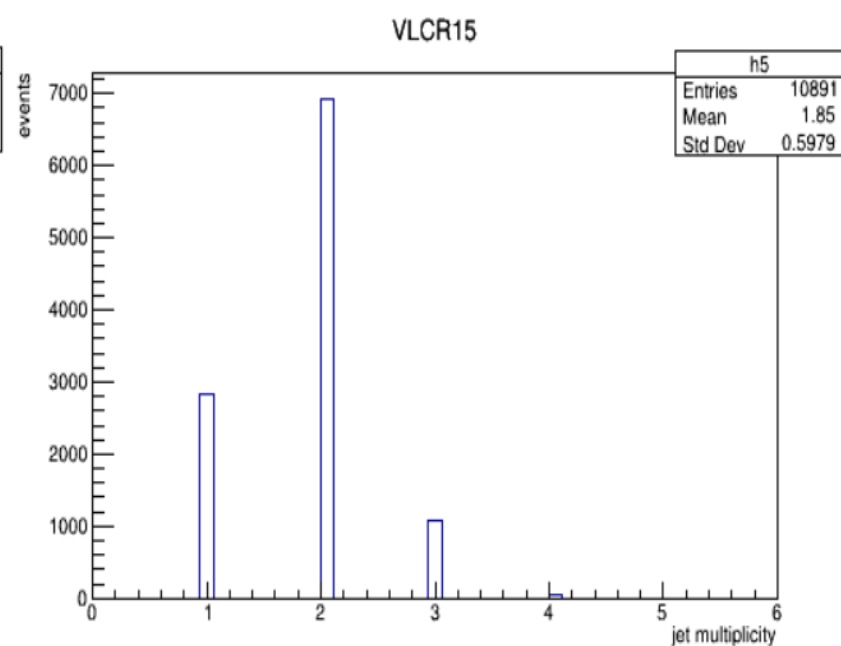
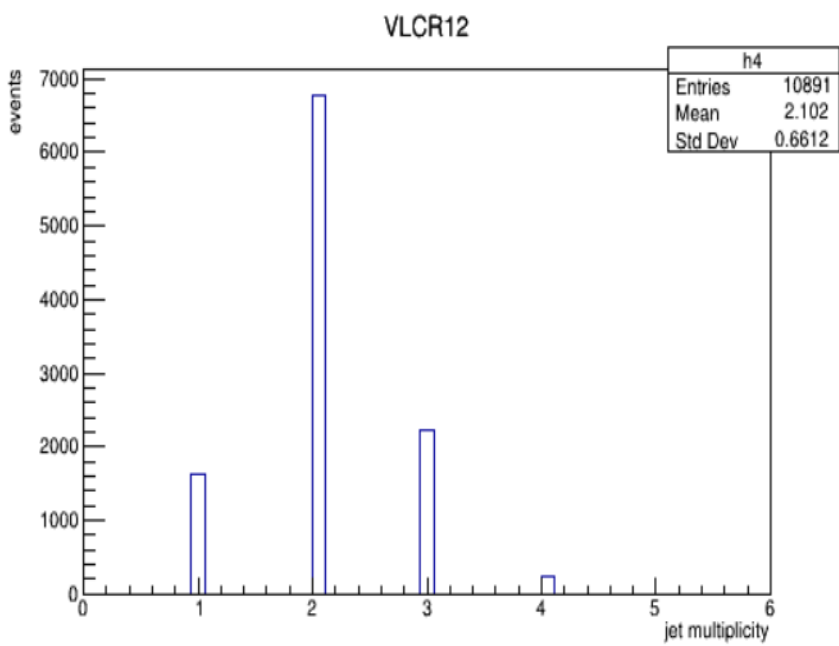
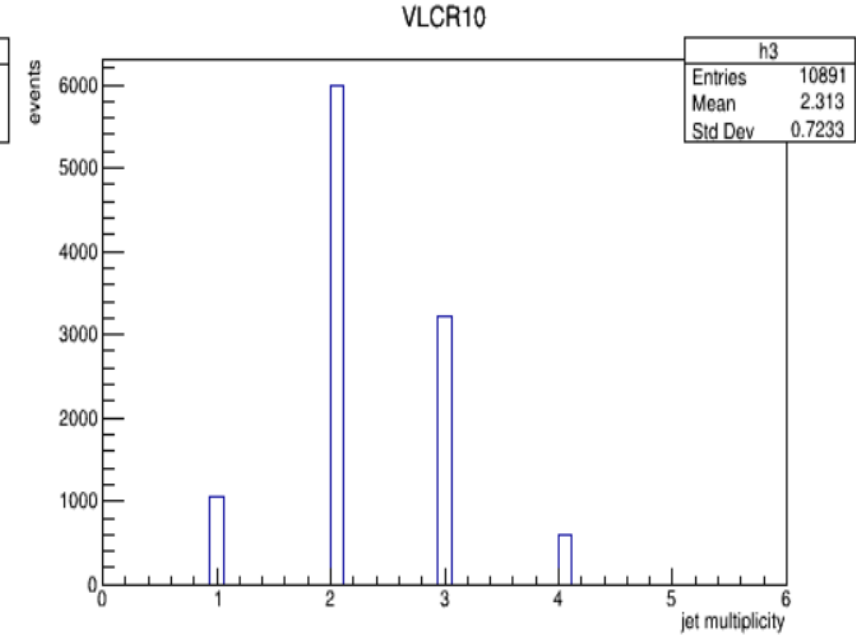
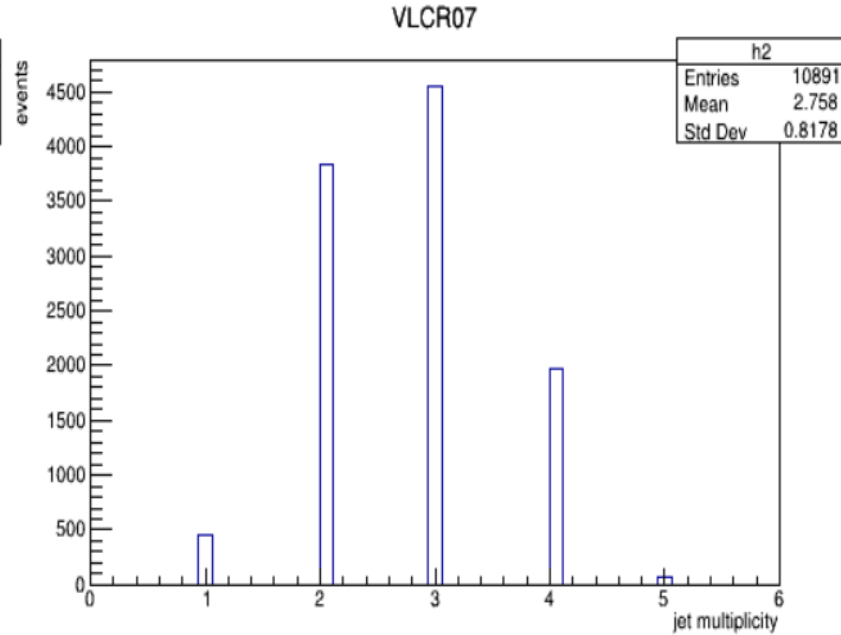
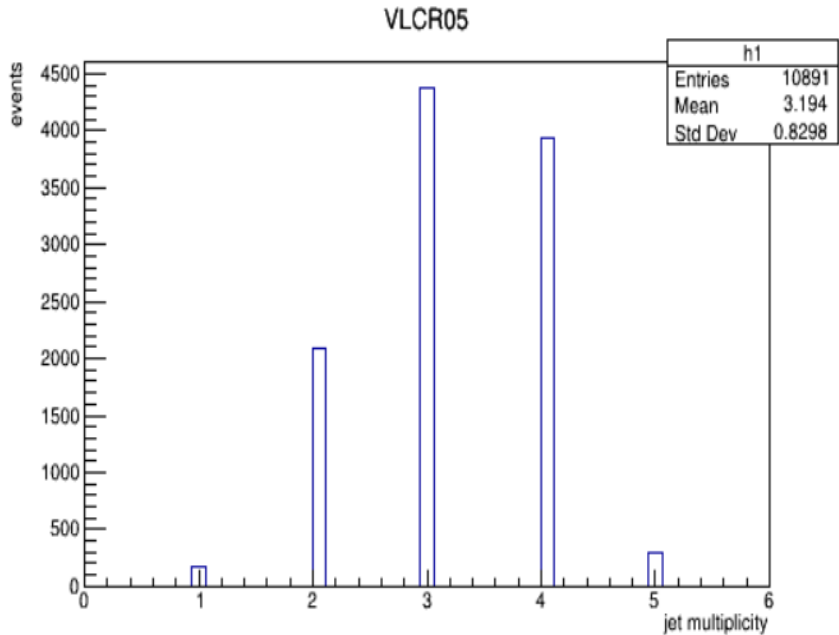


max. dR(quarks) of different Ws for 1 VLCR15 jet

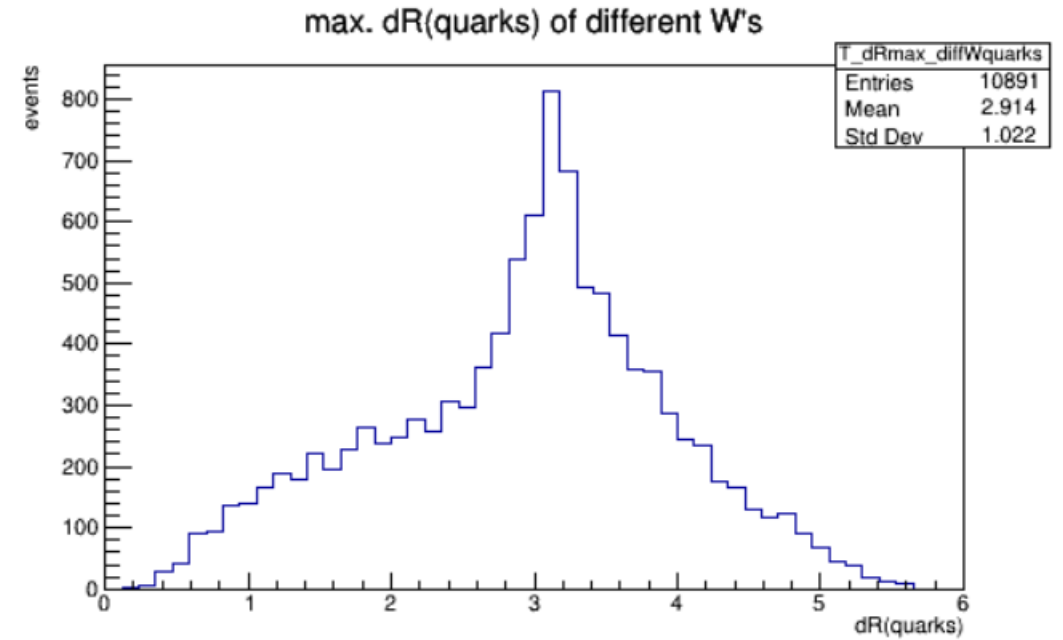
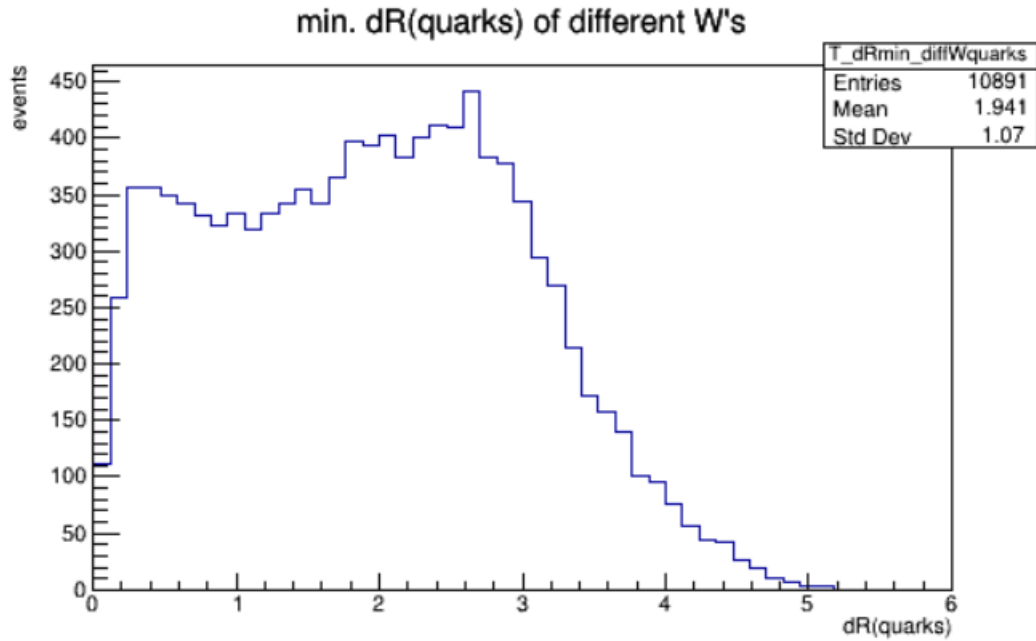


max. dR(quarks) of different Ws for 1 kT jet

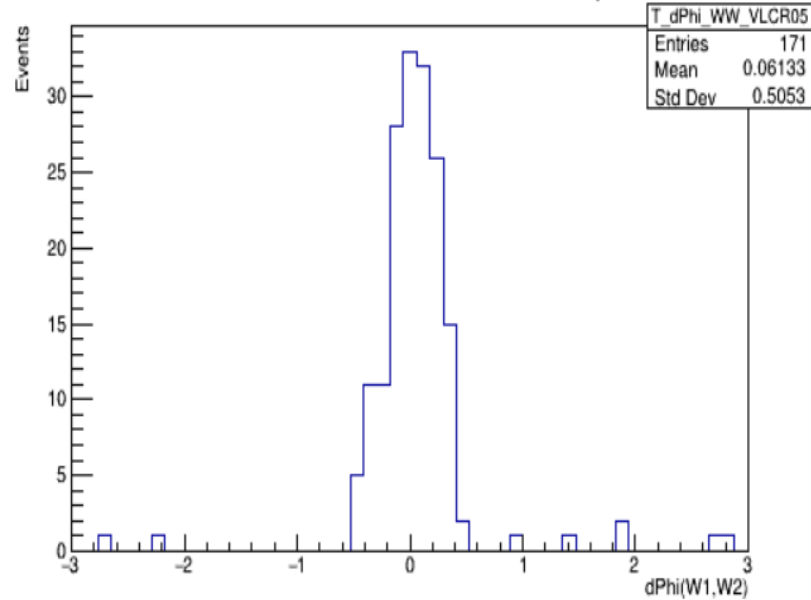




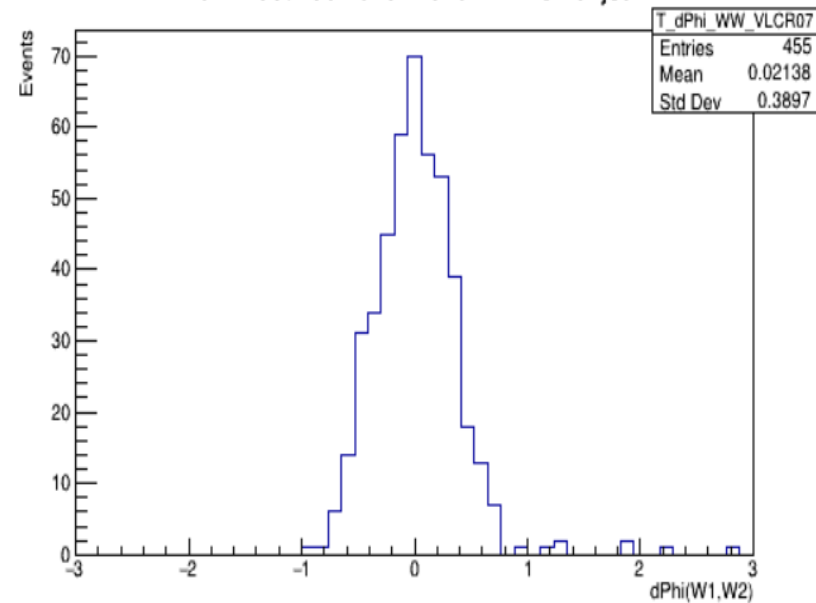
For hadronic states with quarks having $p_T > 30$ GeV and $|\eta| < 2.5$



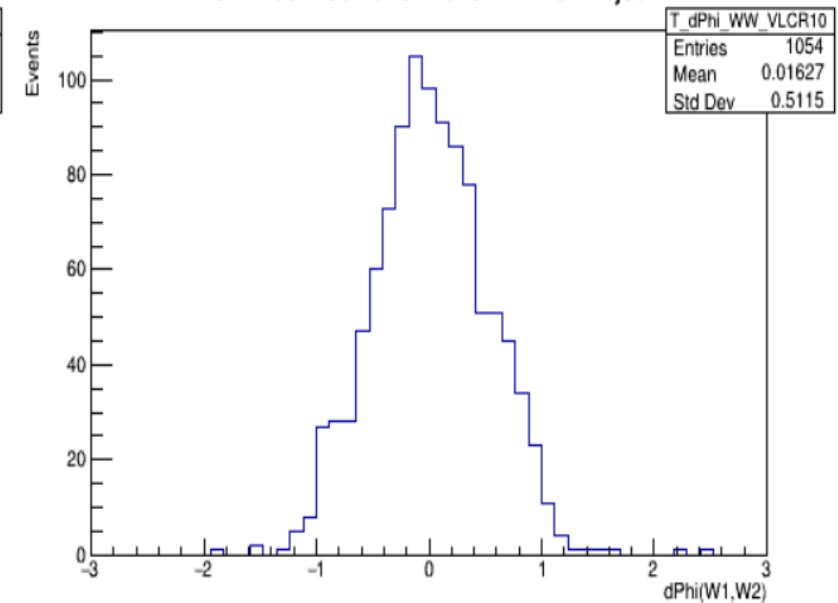
dPhi between two Ws for 1 VLCR05jet



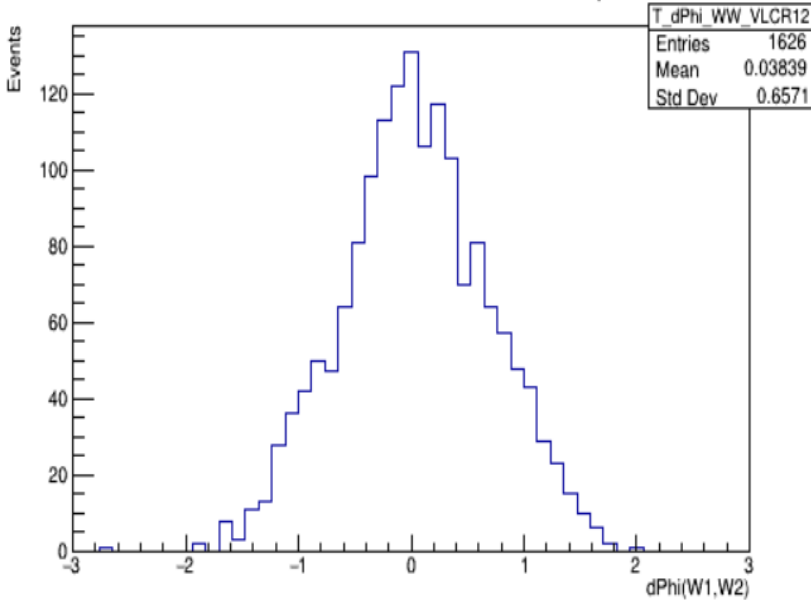
dPhi between two Ws for 1 VLCR07jet



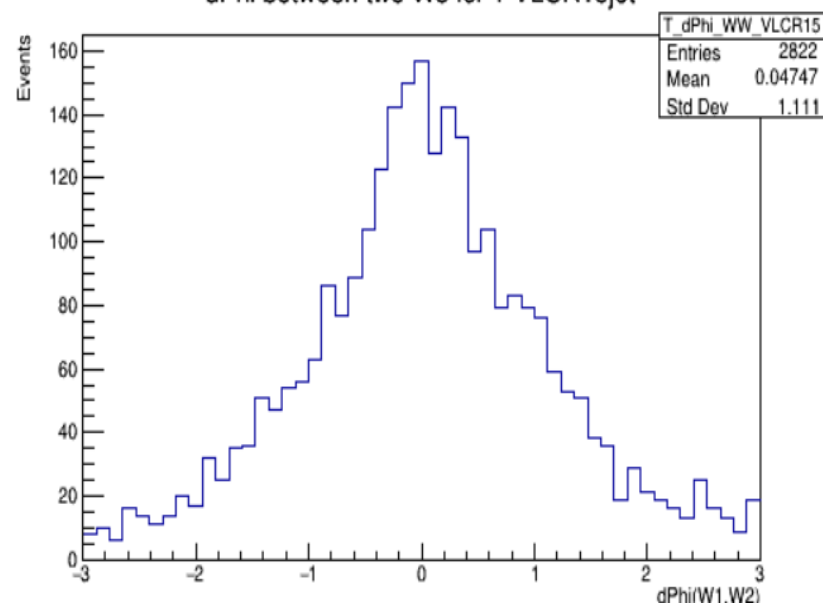
dPhi between two Ws for 1 VLCR10jet



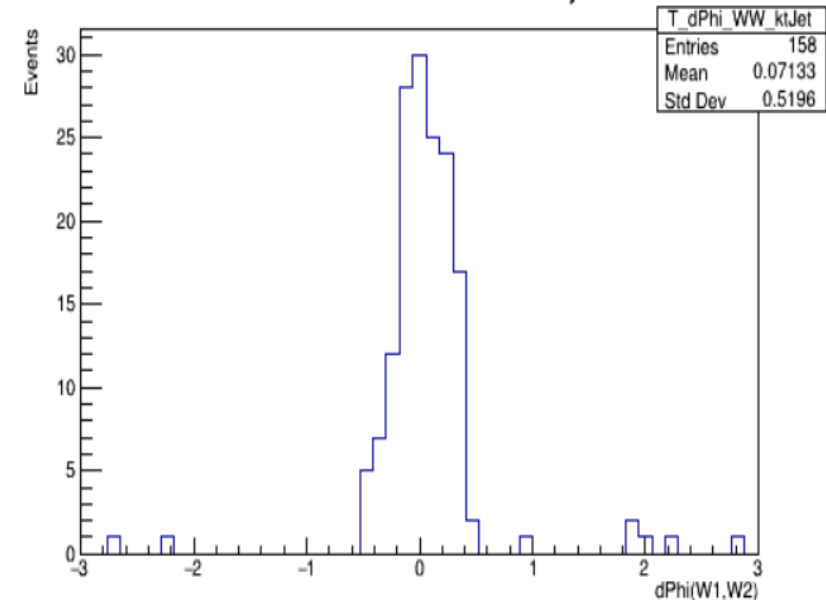
dPhi between two Ws for 1 VLCR12jet



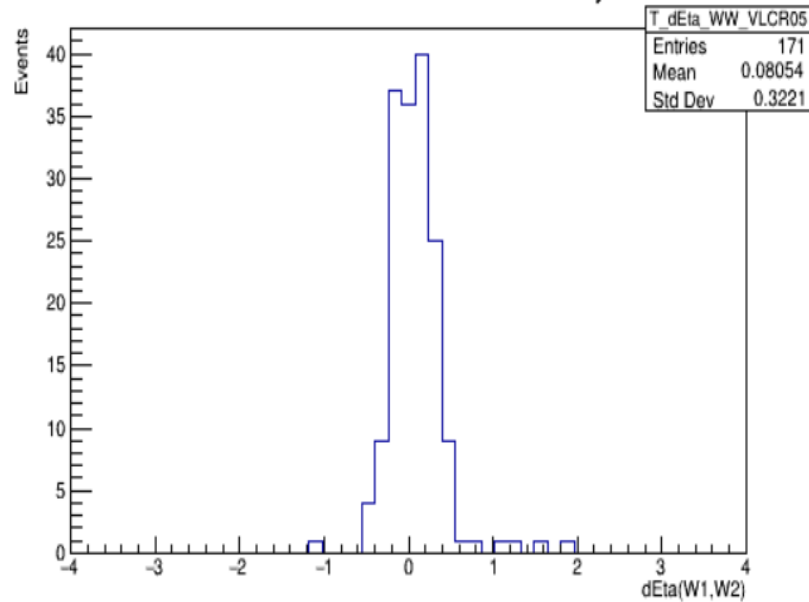
dPhi between two Ws for 1 VLCR15jet



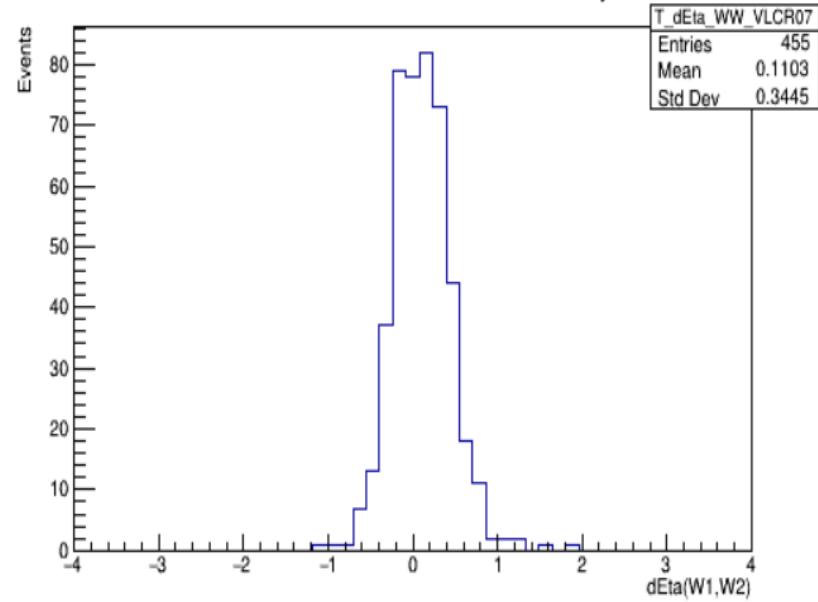
dPhi between two Ws for 1 ktjet



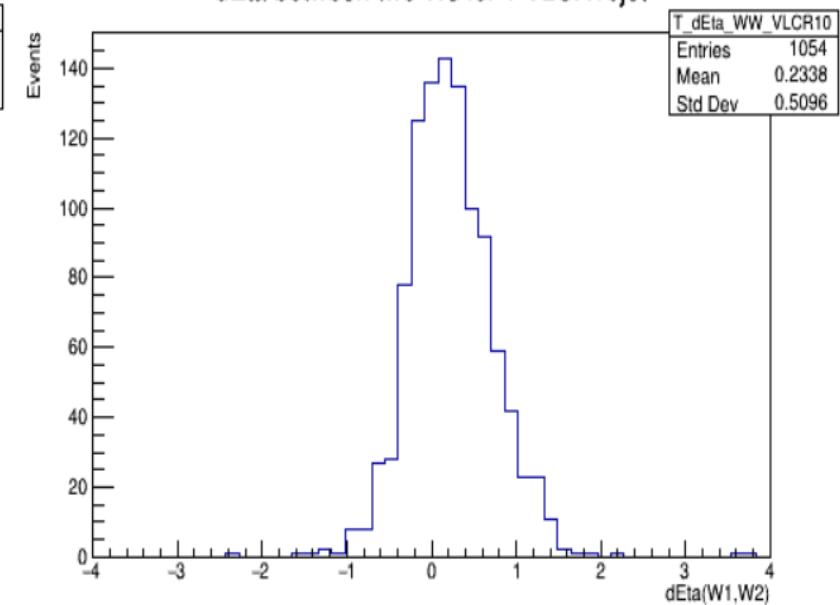
dEta between two Ws for 1 VLCR05jet



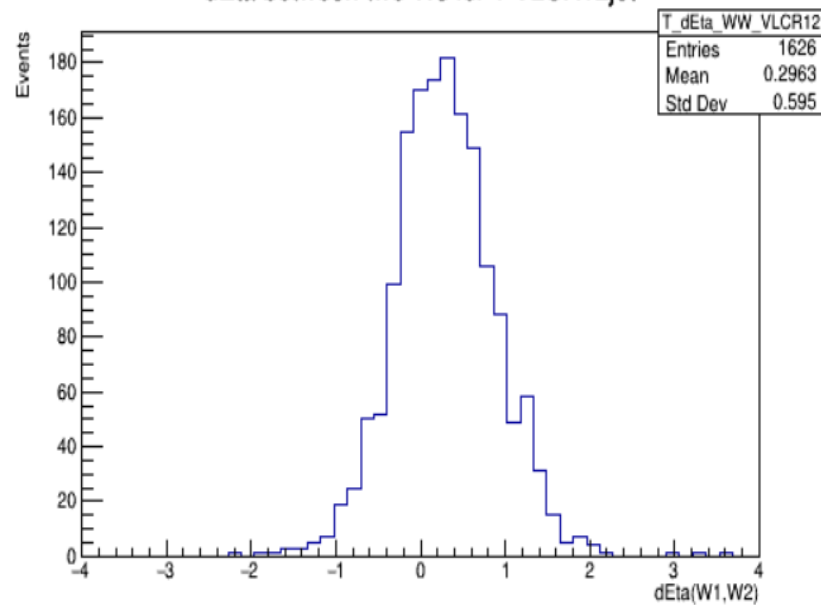
dEta between two Ws for 1 VLCR07jet



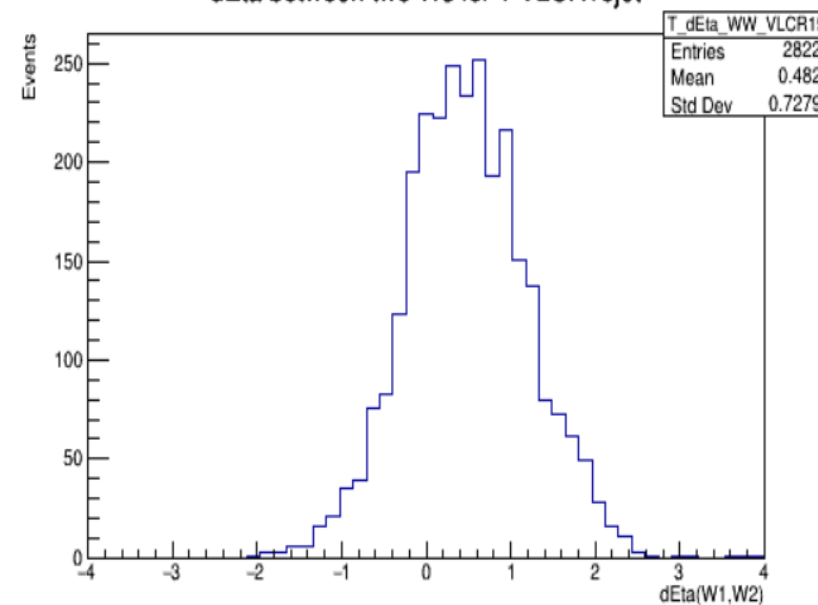
dEta between two Ws for 1 VLCR10jet



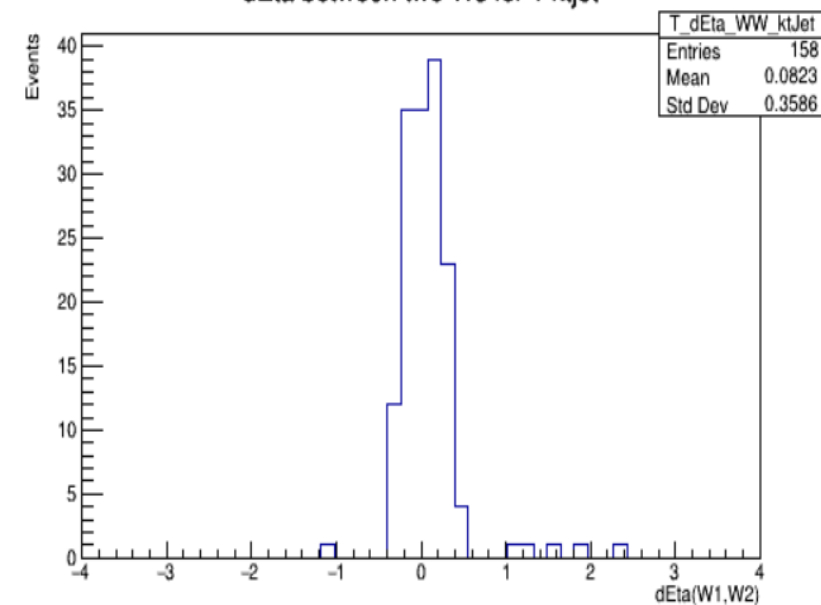
dEta between two Ws for 1 VLCR12jet



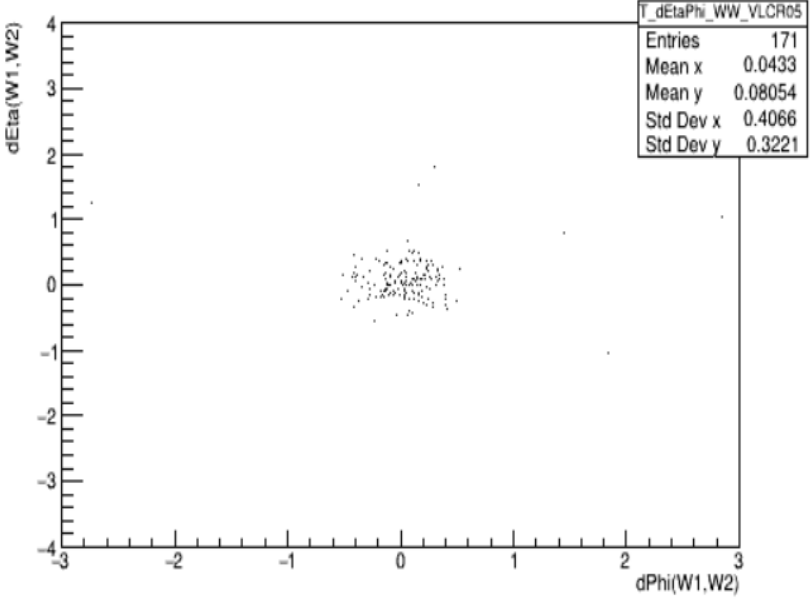
dEta between two Ws for 1 VLCR15jet



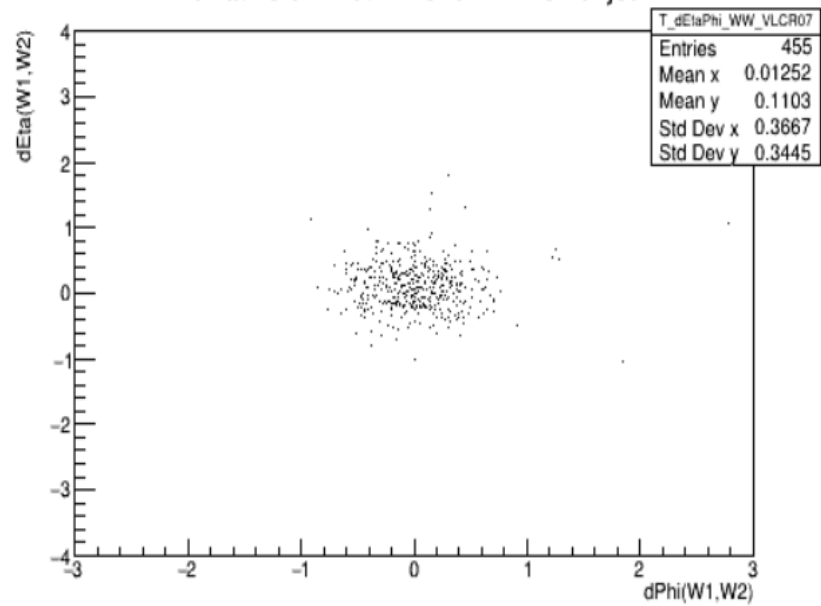
dEta between two Ws for 1 ktjet



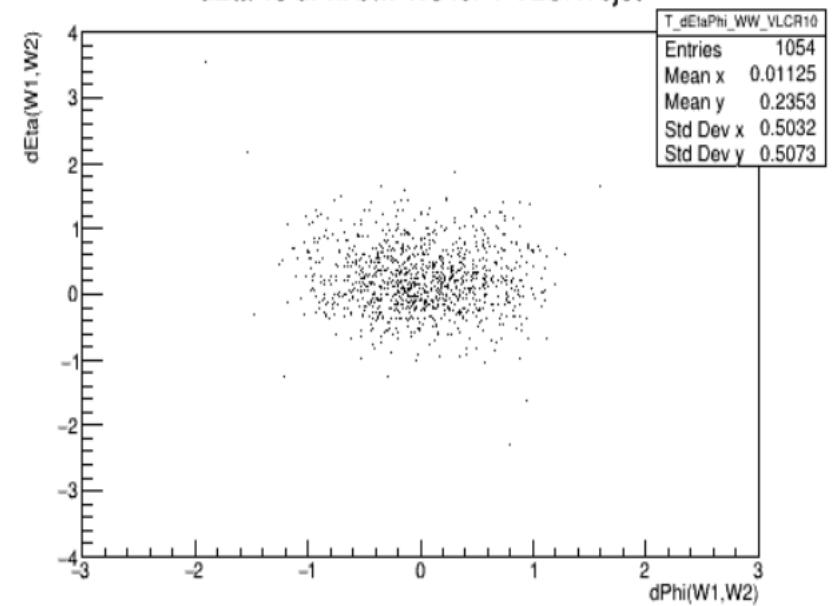
dEta vs dPhi btw Ws for 1 VLCR05jet



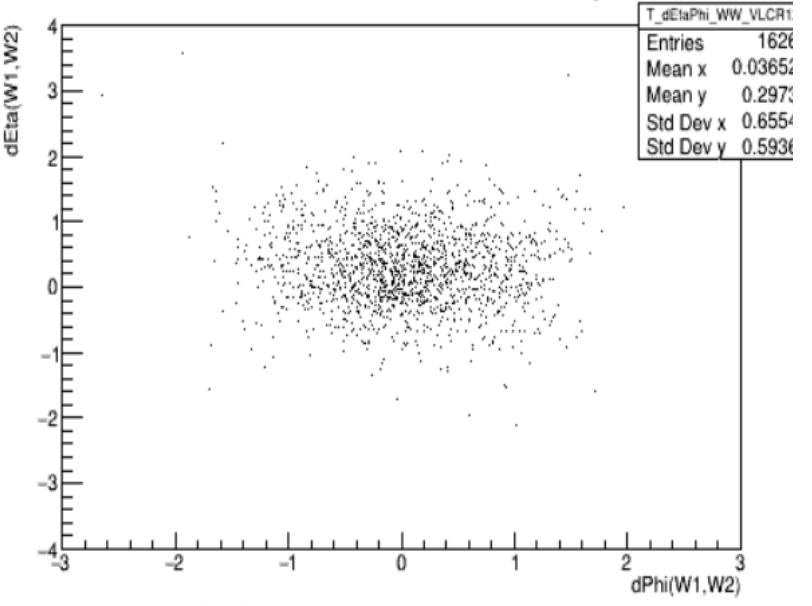
dEta vs dPhi btw Ws for 1 VLCR07jet



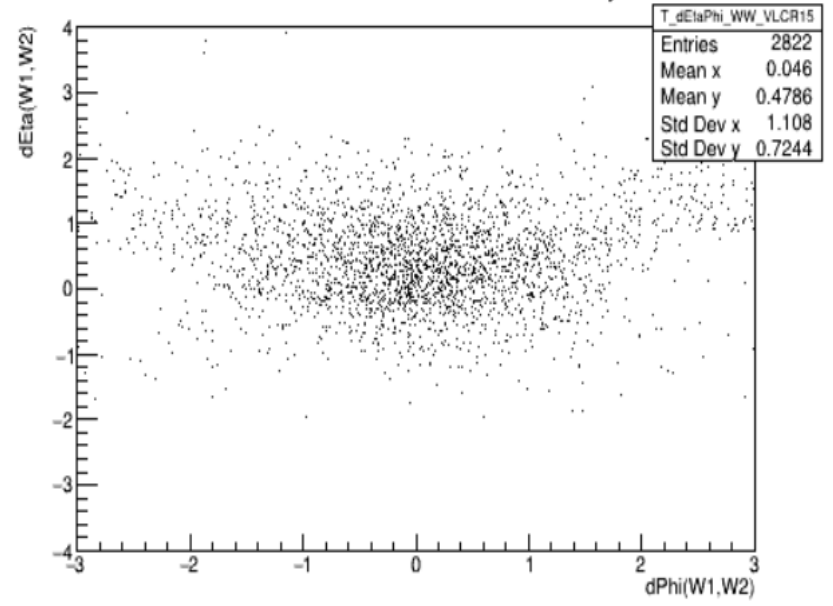
dEta vs dPhi btw Ws for 1 VLCR10jet



dEta vs dPhi btw Ws for 1 VLCR12jet



dEta vs dPhi btw Ws for 1 VLCR15jet



dEta vs dPhi btw Ws for 1 ktjet

