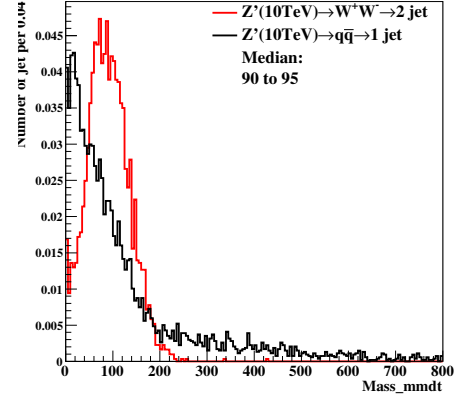
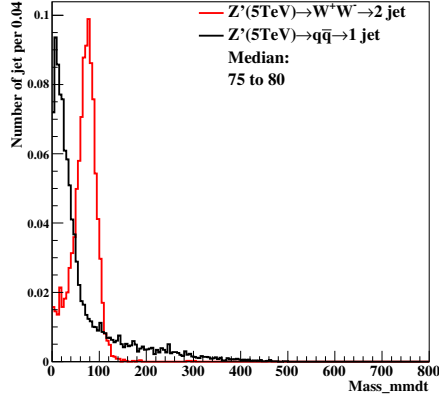


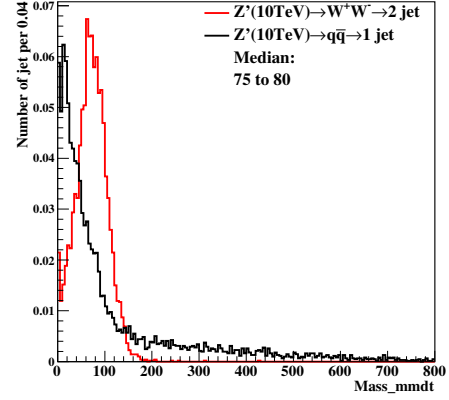
(a) 5TeV at 20×20(cm×cm) in cluster



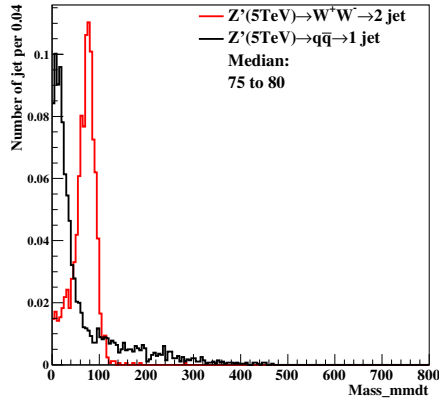
(b) 10TeV at 20×20(cm×cm) in cluster



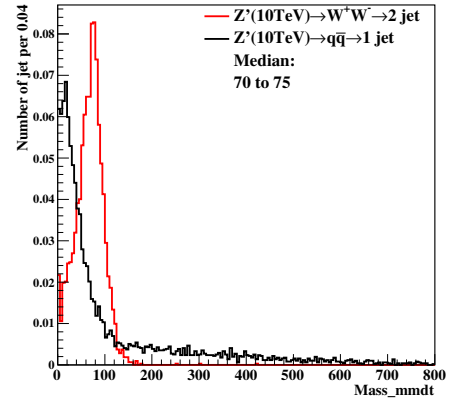
(c) 5TeV at 5×5(cm×cm) in cluster



(d) 10TeV at 5×5(cm×cm) in cluster

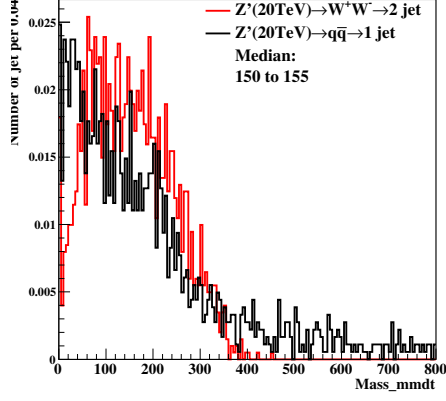


(e) 5TeV at 1×1(cm×cm) in cluster

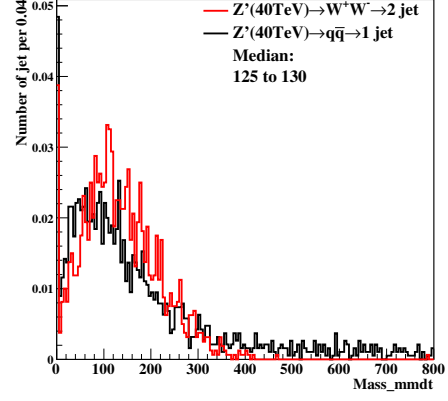


(f) 10TeV at 1×1(cm×cm) in cluster

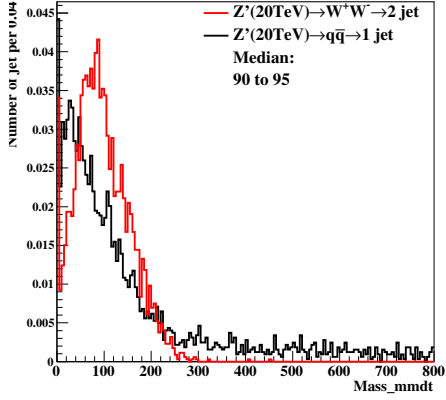
Figure 1: Distributions of mass soft drop at  $\beta=0$ , signal=ww, in 5,10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



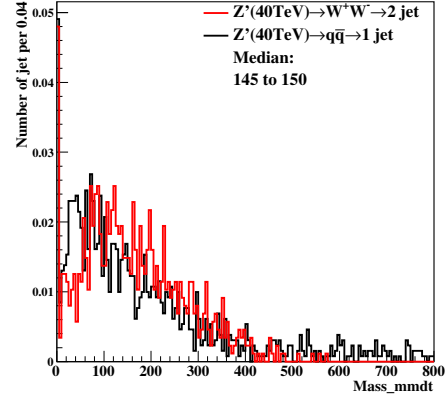
(a) 20TeV at 20×20(cm×cm) in cluster



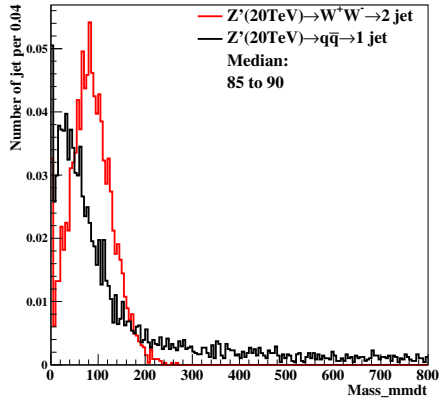
(b) 40TeV at 20×20(cm×cm) in cluster



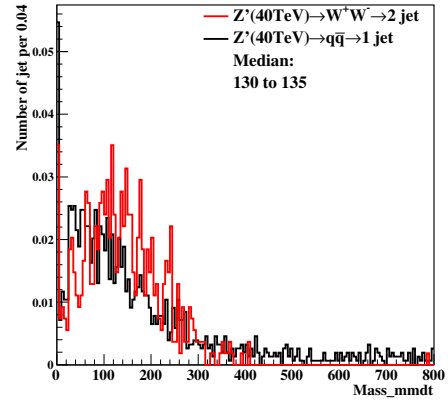
(c) 20TeV at 5×5(cm×cm) in cluster



(d) 40TeV at 5×5(cm×cm) in cluster

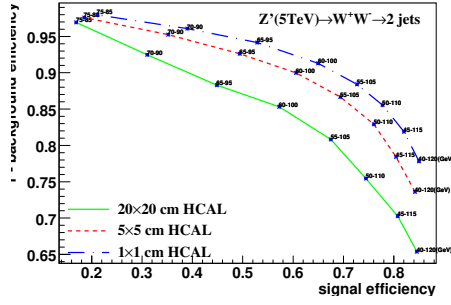


(e) 20TeV at 1×1(cm×cm) in cluster

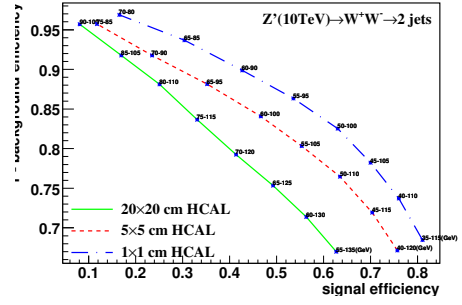


(f) 40TeV at 1×1(cm×cm) in cluster

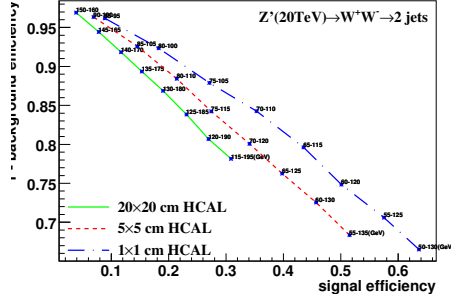
Figure 2: Distributions of mass soft drop at  $\beta=0$ , signal=ww, in 20,40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



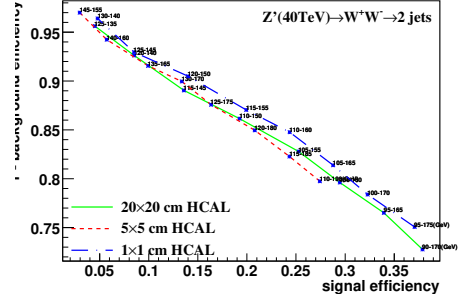
(a) Central at Median( $20 \times 20=80, 5 \times 5=80, 1 \times 1=80$ ) change width in cluster at 5TeV



(b) Central at Median( $20 \times 20=95, 5 \times 5=80, 1 \times 1=75$ ) change width in cluster at 10TeV

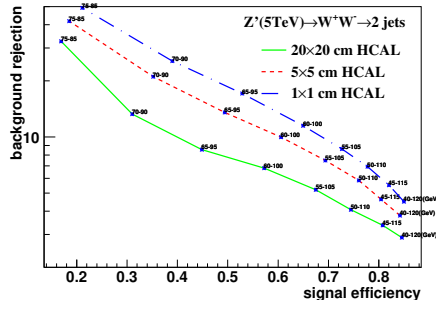


(c) Central at Median( $20 \times 20=155, 5 \times 5=95, 1 \times 1=90$ ) change width in cluster at 20TeV

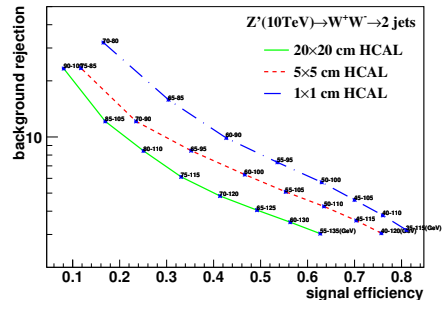


(d) Central at Median( $20 \times 20=130, 5 \times 5=150, 1 \times 1=135$ ) change width in cluster at 40TeV

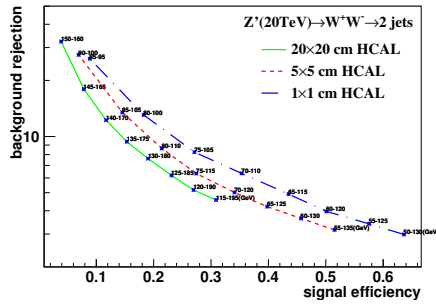
Figure 3: study of "fix central and change width" in mass soft drop at  $\beta=0$ , signal=ww, in 5, 10, 20, 40TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20$ ,  $5 \times 5$ , and  $1 \times 1$ (cm $\times$ cm) are shown in each picture.



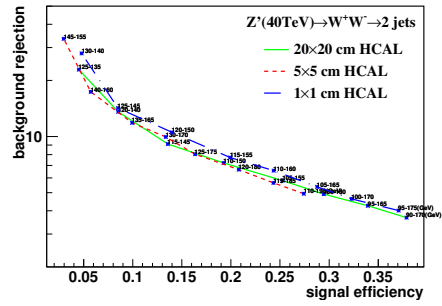
(a) Central at Median( $20 \times 20=80, 5 \times 5=80, 1 \times 1=80$ ) change width in cluster at 5TeV



(b) Central at Median( $20 \times 20=95, 5 \times 5=80, 1 \times 1=75$ ) change width in cluster at 10TeV

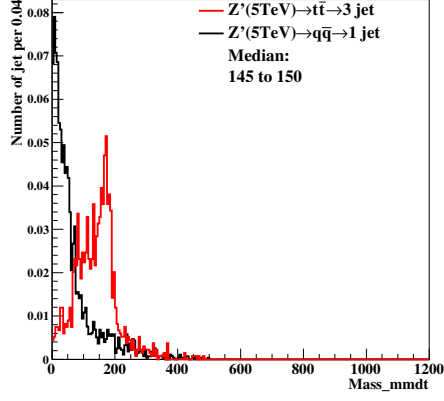


(c) Central at Median( $20 \times 20=155, 5 \times 5=95, 1 \times 1=90$ ) change width in cluster at 20TeV

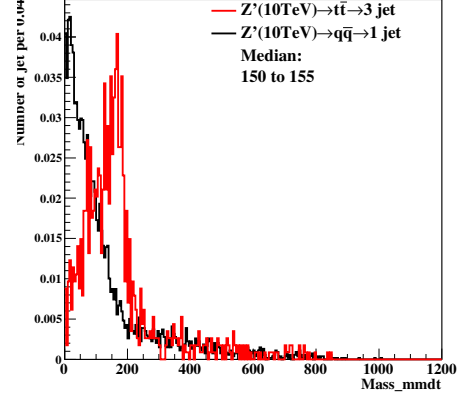


(d) Central at Median( $20 \times 20=130, 5 \times 5=150, 1 \times 1=135$ ) change width in cluster at 40TeV

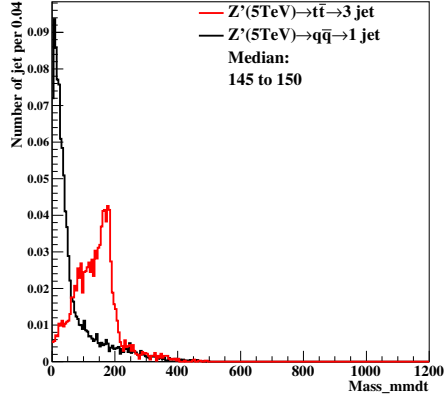
Figure 4: study of "fix central and change width" in mass soft drop at  $\beta=0$ , signal=ww, in 5, 10, 20, 40TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20, 5 \times 5$ , and  $1 \times 1$ (cm $\times$ cm) are shown in each picture.



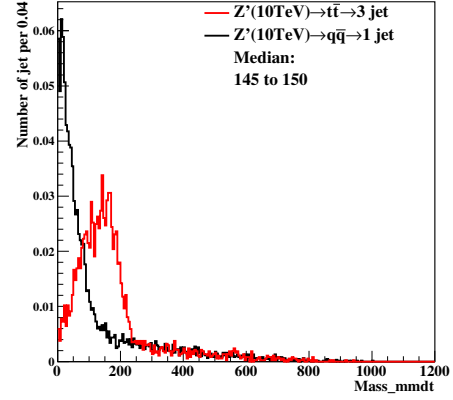
(a) 5TeV at  $20 \times 20(\text{cm} \times \text{cm})$  in cluster



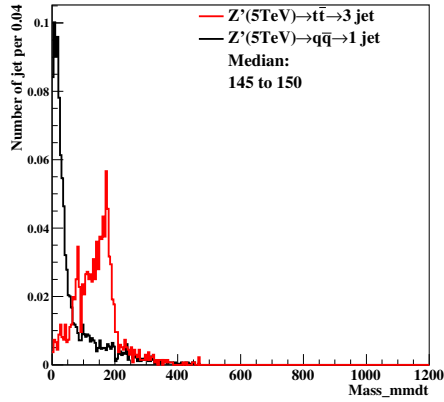
(b) 10TeV at  $20 \times 20(\text{cm} \times \text{cm})$  in cluster



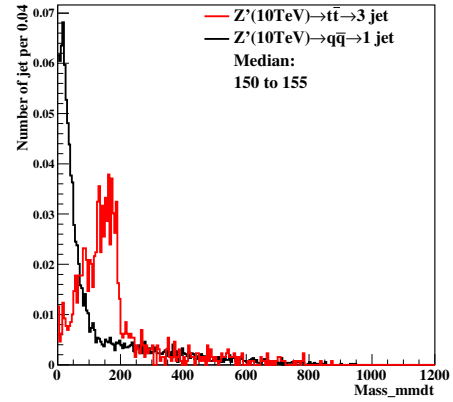
(c) 5TeV at  $5 \times 5(\text{cm} \times \text{cm})$  in cluster



(d) 10TeV at  $5 \times 5(\text{cm} \times \text{cm})$  in cluster

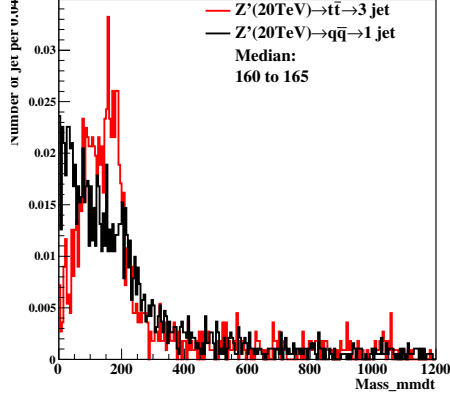


(e) 5TeV at  $1 \times 1(\text{cm} \times \text{cm})$  in cluster

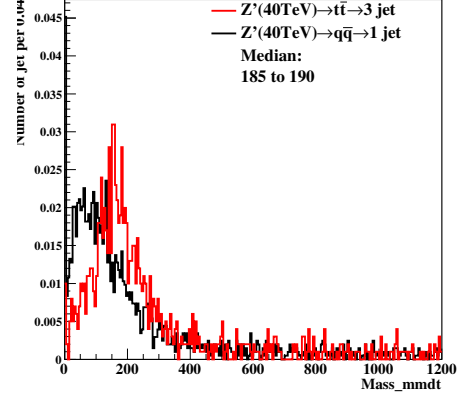


(f) 10TeV at  $1 \times 1(\text{cm} \times \text{cm})$  in cluster

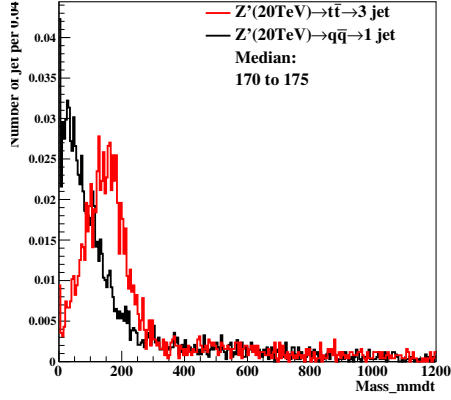
Figure 5: Distributions of mass soft drop at  $\beta=0$ , signal= $t\bar{t}$ , in 5,10TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20$ ,  $5 \times 5$ , and  $1 \times 1(\text{cm} \times \text{cm})$  are shown here.



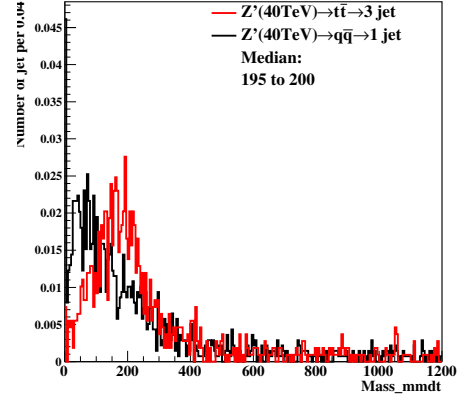
(a) 20TeV at 20×20(cm×cm) in cluster



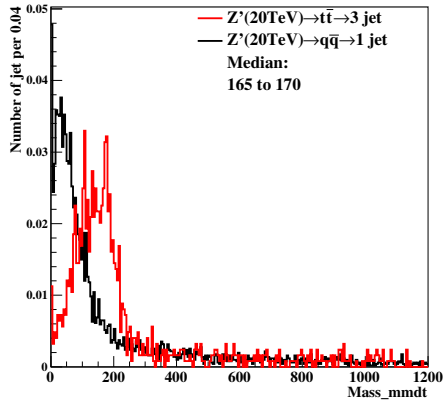
(b) 40TeV at 20×20(cm×cm) in cluster



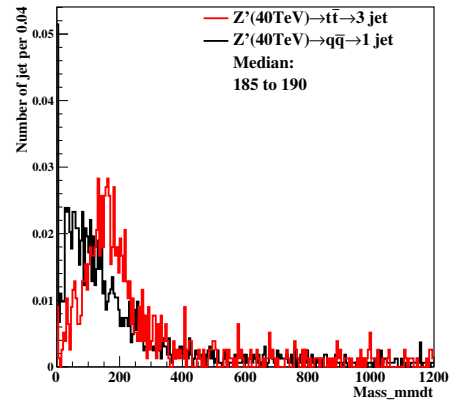
(c) 20TeV at 5×5(cm×cm) in cluster



(d) 40TeV at 5×5(cm×cm) in cluster

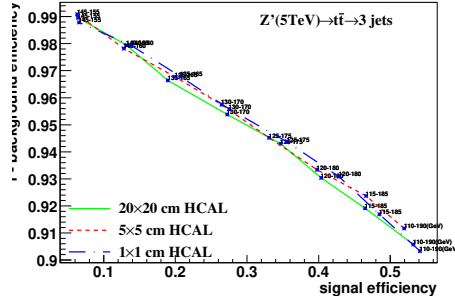


(e) 20TeV at 1×1(cm×cm) in cluster

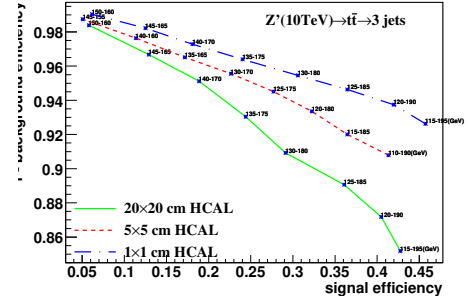


(f) 40TeV at 1×1(cm×cm) in cluster

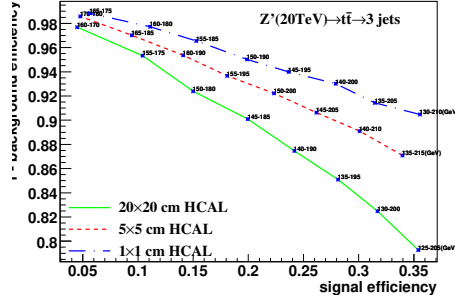
Figure 6: Distributions of mass soft drop at  $\beta=0$ , signal= $t\bar{t}$ , in 20,40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



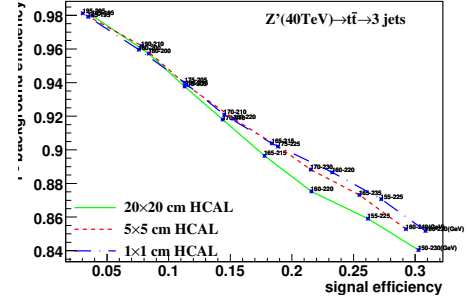
(a) Central at Median( $20 \times 20=150, 5 \times 5=150, 1 \times 1=150$ ) change width in cluster at 5TeV



(b) Central at Median( $20 \times 20=155, 5 \times 5=150, 1 \times 1=155$ ) change width in cluster at 10TeV

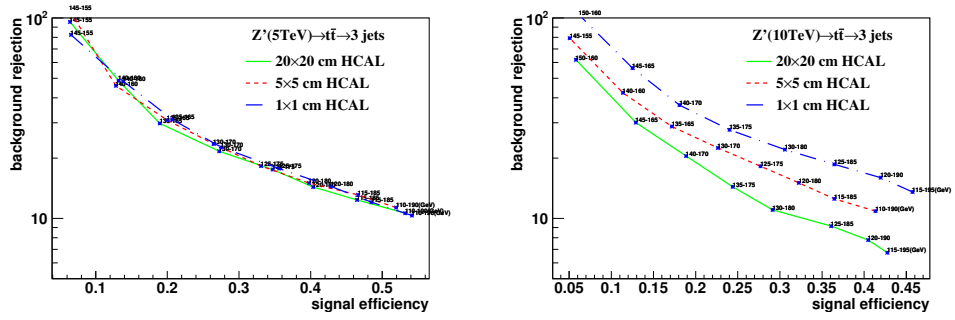


(c) Central at Median( $20 \times 20=165, 5 \times 5=175, 1 \times 1=170$ ) change width in cluster at 20TeV



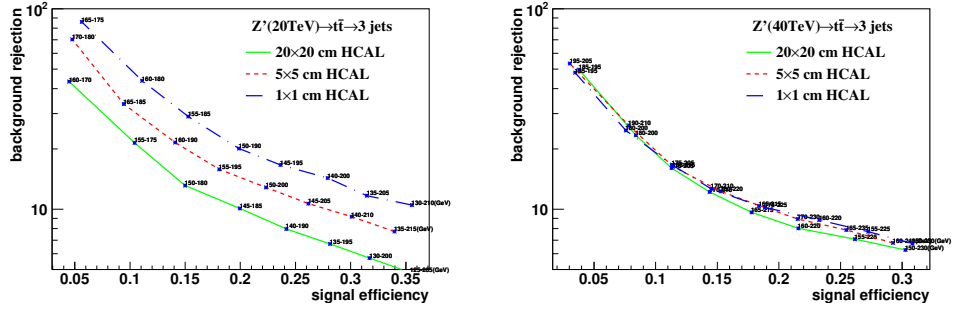
(d) Central at Median( $20 \times 20=190, 5 \times 5=200, 1 \times 1=190$ ) change width in cluster at 40TeV

Figure 7: study of "fix central and change width" in mass soft drop at  $\beta=0$ , signal= $t\bar{t}$ , in 5, 10, 20, 40TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20$ ,  $5 \times 5$ , and  $1 \times 1$ (cm $\times$ cm) are shown in each picture.



(a) Central at Median( $20 \times 20=150, 5 \times 5=150, 1 \times 1=150$ ) change width in cluster at 5TeV

(b) Central at Median( $20 \times 20=155, 5 \times 5=150, 1 \times 1=155$ ) change width in cluster at 10TeV

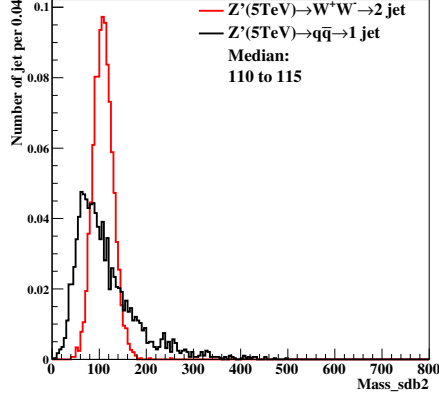


(c) Central at Median( $20 \times 20=165, 5 \times 5=175, 1 \times 1=170$ ) change width in cluster at 20TeV

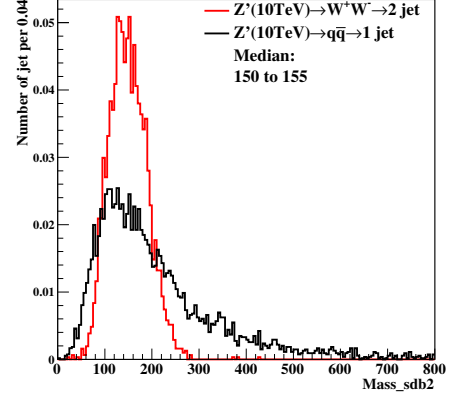
(d) Central at Median( $20 \times 20=190, 5 \times 5=200, 1 \times 1=190$ ) change width in cluster at 40TeV

Figure 8: study of "fix central and change width" in mass soft drop at  $\beta=0$ , signal= $t\bar{t}$ , in 5, 10, 20, 40TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20$ ,  $5 \times 5$ , and  $1 \times 1$ (cm $\times$ cm) are shown in each picture.

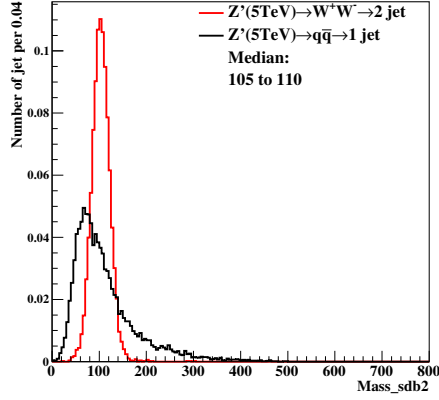




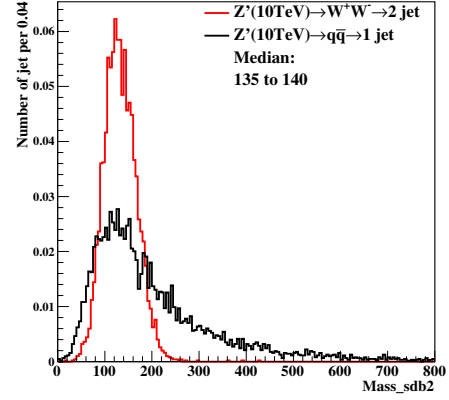
(a) 5TeV at 20×20(cm×cm) in cluster



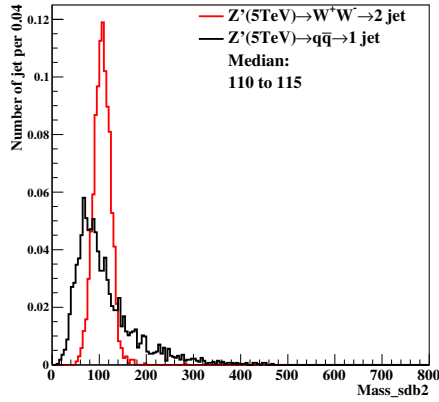
(b) 10TeV at 20×20(cm×cm) in cluster



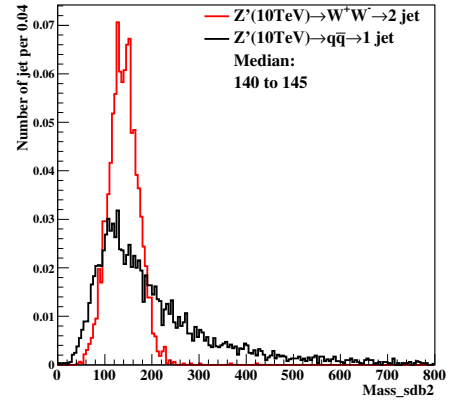
(c) 5TeV at 5×5(cm×cm) in cluster



(d) 10TeV at 5×5(cm×cm) in cluster

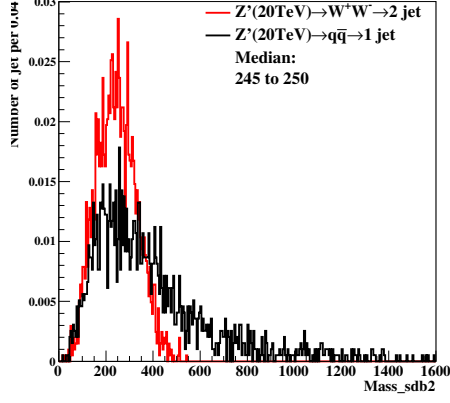


(e) 5TeV at 1×1(cm×cm) in cluster

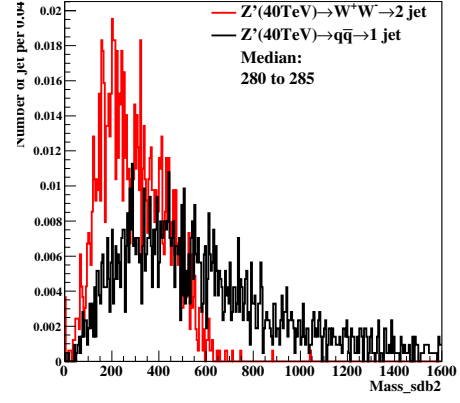


(f) 10TeV at 1×1(cm×cm) in cluster

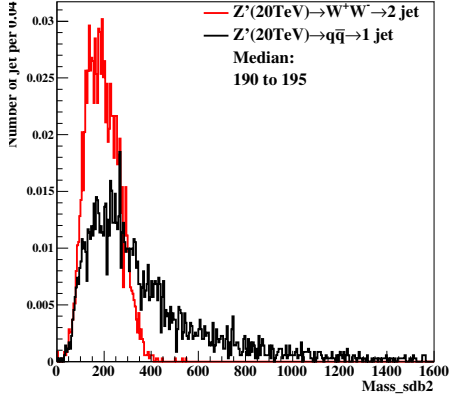
Figure 9: Distributions of mass soft drop at  $\beta=2$ , signal=ww, in 5,10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



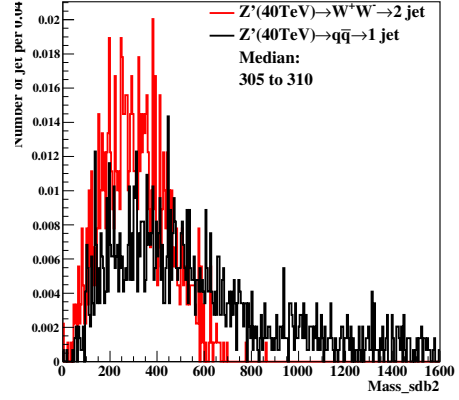
(a) 20TeV at 20×20(cm×cm) in cluster



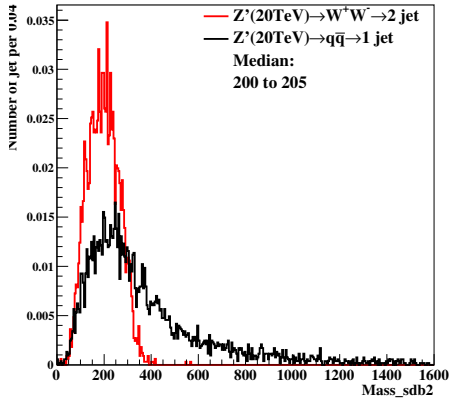
(b) 40TeV at 20×20(cm×cm) in cluster



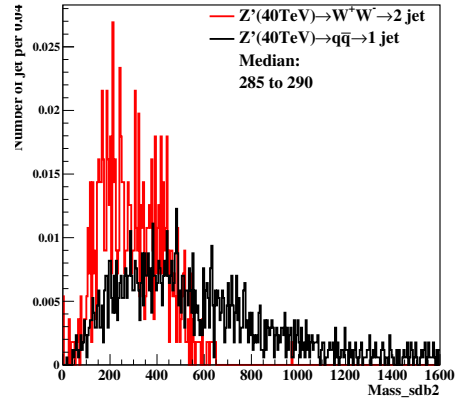
(c) 20TeV at 5×5(cm×cm) in cluster



(d) 40TeV at 5×5(cm×cm) in cluster

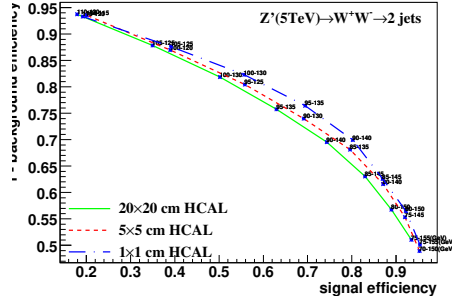


(e) 20TeV at 1×1(cm×cm) in cluster

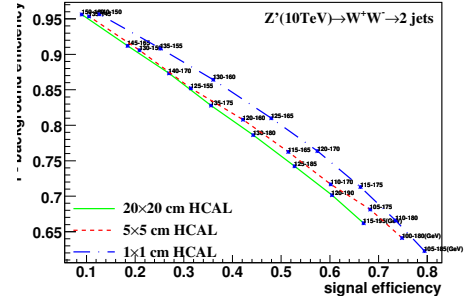


(f) 40TeV at 1×1(cm×cm) in cluster

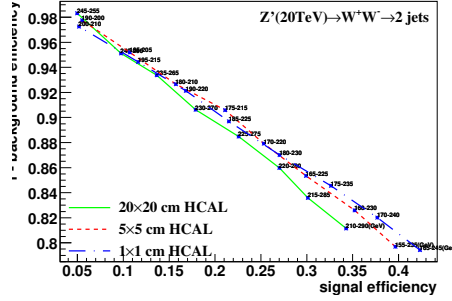
Figure 10: Distributions of mass soft drop at  $\beta=2$ , signal=ww, in 20,40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



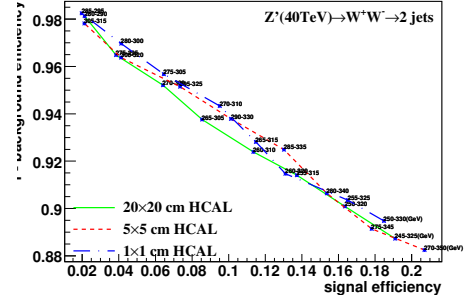
(a) Central at Median( $20 \times 20=115,5 \times 5=110,1 \times 1=115$ ) change width in cluster at 5TeV



(b) Central at Median( $20 \times 20=155,5 \times 5=140,1 \times 1=145$ ) change width in cluster at 10TeV

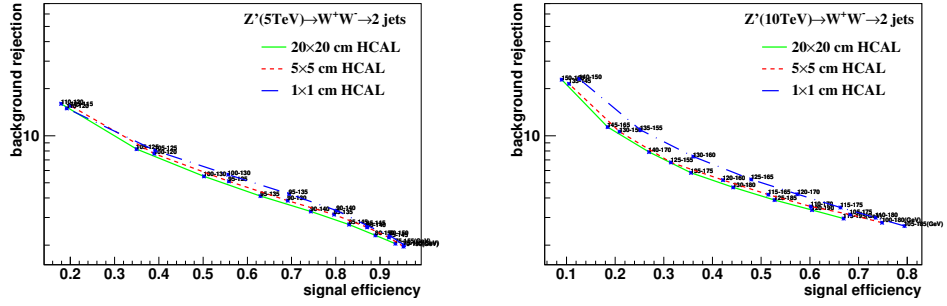


(c) Central at Median( $20 \times 20=250,5 \times 5=195,1 \times 1=205$ ) change width in cluster at 20TeV



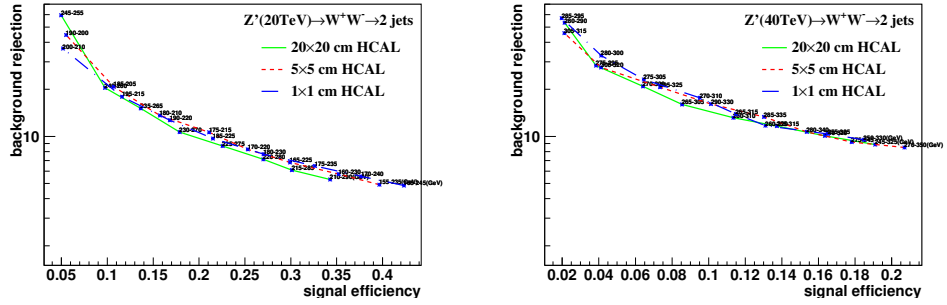
(d) Central at Median( $20 \times 20=285,5 \times 5=310,1 \times 1=290$ ) change width in cluster at 40TeV

Figure 11: study of "fix central and change width" in mass soft drop at  $\beta=2$ , signal=ww, in 5, 10, 20, 40TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20$ ,  $5 \times 5$ , and  $1 \times 1$ (cm $\times$ cm) are shown in each picture.



(a) Central at Median( $20 \times 20=115,5 \times 5=110,1 \times 1=115$ ) change width in cluster at 5TeV

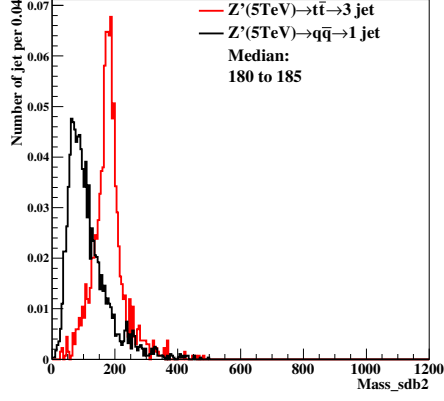
(b) Central at Median( $20 \times 20=155,5 \times 5=140,1 \times 1=145$ ) change width in cluster at 10TeV



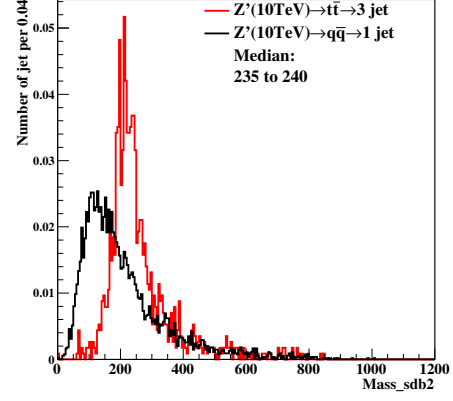
(c) Central at Median( $20 \times 20=250,5 \times 5=195,1 \times 1=205$ ) change width in cluster at 20TeV

(d) Central at Median( $20 \times 20=285,5 \times 5=310,1 \times 1=290$ ) change width in cluster at 40TeV

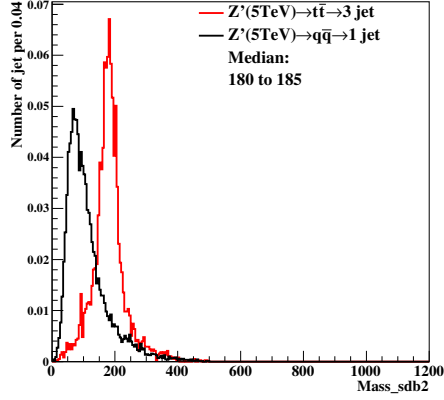
Figure 12: study of "fix central and change width" in mass soft drop at  $\beta=2$ , signal=ww, in 5, 10, 20, 40TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20$ ,  $5 \times 5$ , and  $1 \times 1$ (cm $\times$ cm) are shown in each picture.



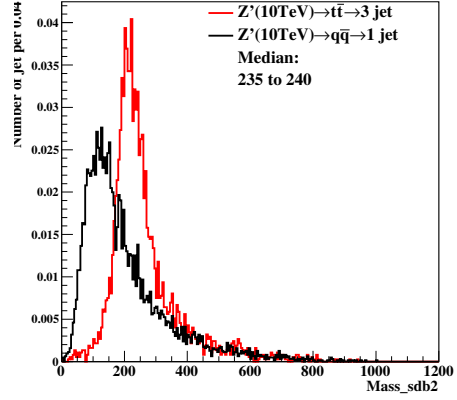
(a) 5TeV at 20×20(cm×cm) in cluster



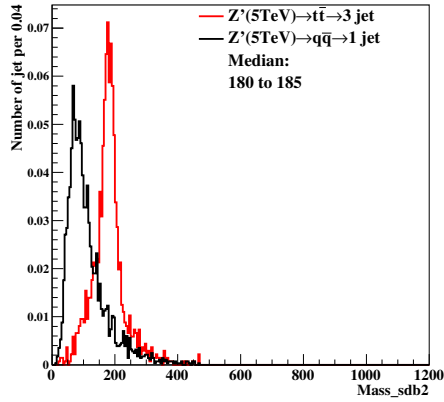
(b) 10TeV at 20×20(cm×cm) in cluster



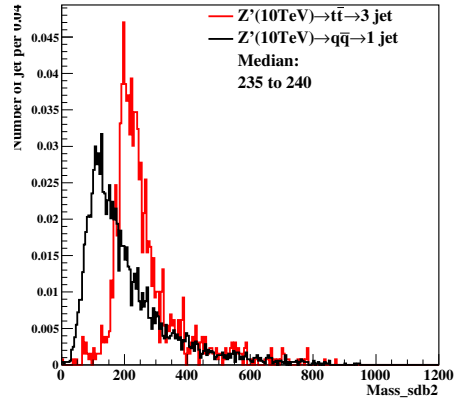
(c) 5TeV at 5×5(cm×cm) in cluster



(d) 10TeV at 5×5(cm×cm) in cluster

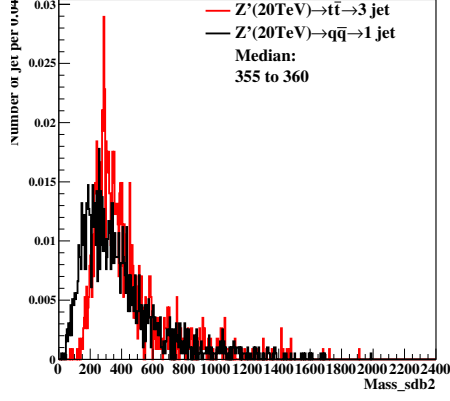


(e) 5TeV at 1×1(cm×cm) in cluster

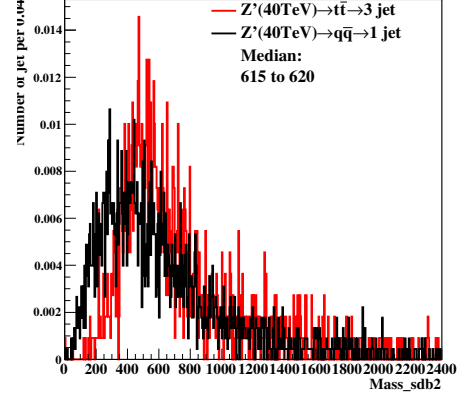


(f) 10TeV at 1×1(cm×cm) in cluster

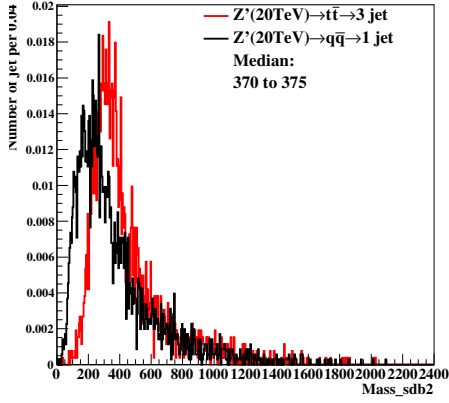
Figure 13: Distributions of mass soft drop at  $\beta=2$ , signal= $tt$ , in 5,10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



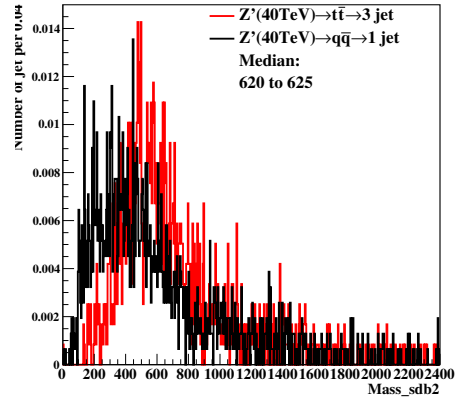
(a) 20TeV at 20×20(cm×cm) in cluster



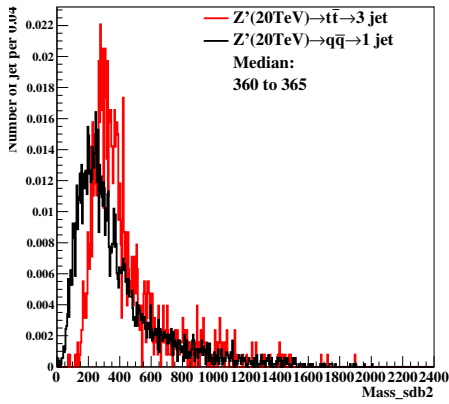
(b) 40TeV at 20×20(cm×cm) in cluster



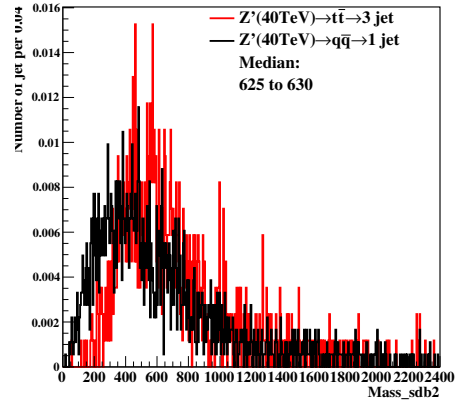
(c) 20TeV at 5×5(cm×cm) in cluster



(d) 40TeV at 5×5(cm×cm) in cluster

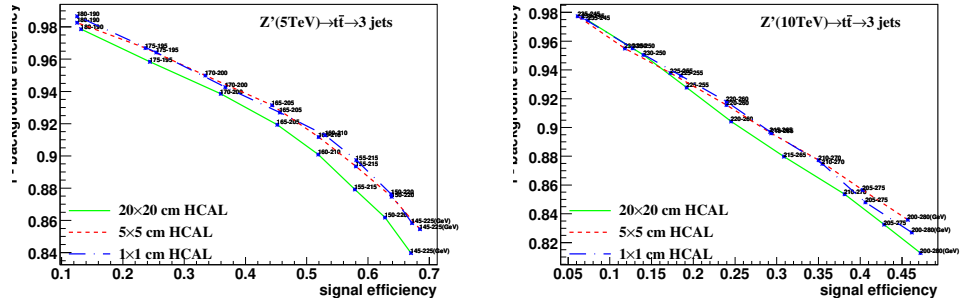


(e) 20TeV at 1×1(cm×cm) in cluster



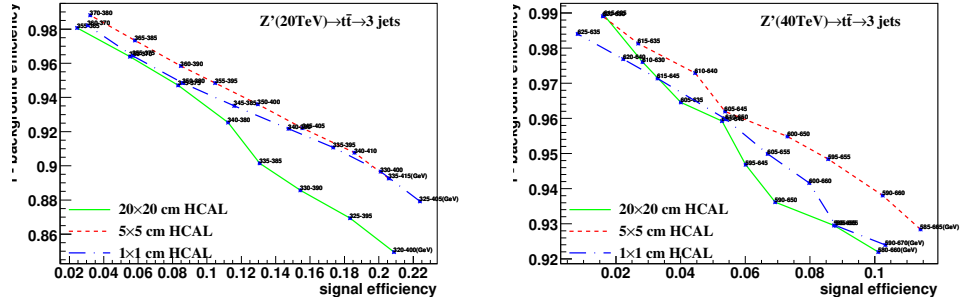
(f) 40TeV at 1×1(cm×cm) in cluster

Figure 14: Distributions of mass soft drop at  $\beta=2$ , signal= $t\bar{t}$ , in 20,40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



(a) Central at Median( $20 \times 20=185,5 \times 5=185,1 \times 1=185$ ) change width in cluster at 5TeV

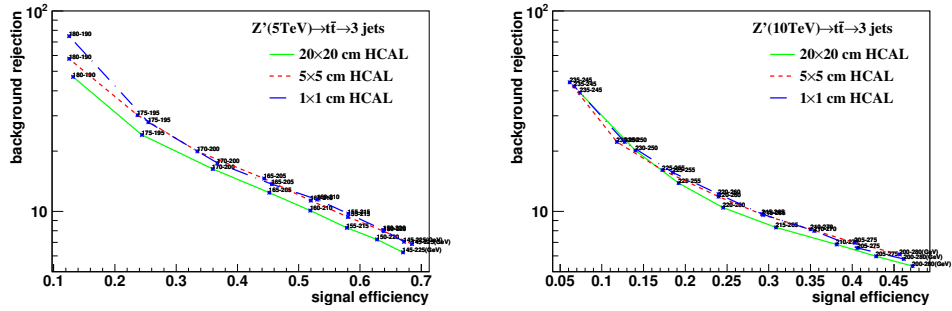
(b) Central at Median( $20 \times 20=240,5 \times 5=240,1 \times 1=240$ ) change width in cluster at 10TeV



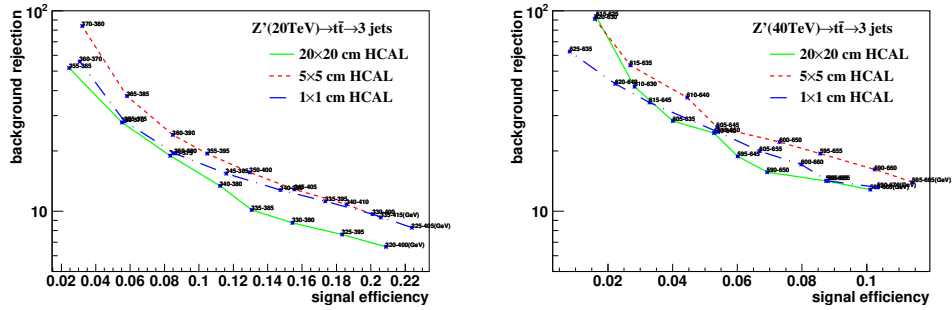
(c) Central at Median( $20 \times 20=360,5 \times 5=375,1 \times 1=365$ ) change width in cluster at 20TeV

(d) Central at Median( $20 \times 20=620,5 \times 5=625,1 \times 1=630$ ) change width in cluster at 40TeV

Figure 15: study of "fix central and change width" in mass soft drop at  $\beta=2$ , signal=tt, in 5, 10, 20, 40TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20$ ,  $5 \times 5$ , and  $1 \times 1$ (cm $\times$ cm) are shown in each picture.



(a) Central at Median( $20 \times 20=185,5 \times 5=185,1 \times 1=185$ ) change width in cluster at 5TeV (b) Central at Median( $20 \times 20=240,5 \times 5=240,1 \times 1=240$ ) change width in cluster at 10TeV



(c) Central at Median( $20 \times 20=360,5 \times 5=375,1 \times 1=365$ ) change width in cluster at 20TeV (d) Central at Median( $20 \times 20=620,5 \times 5=625,1 \times 1=630$ ) change width in cluster at 40TeV

Figure 16: study of "fix central and change width" in mass soft drop at  $\beta=2$ , signal= $t\bar{t}$ , in 5, 10, 20, 40TeV energy of collision in different detector sizes. Cell Size in  $20 \times 20$ ,  $5 \times 5$ , and  $1 \times 1$ (cm $\times$ cm) are shown in each picture.