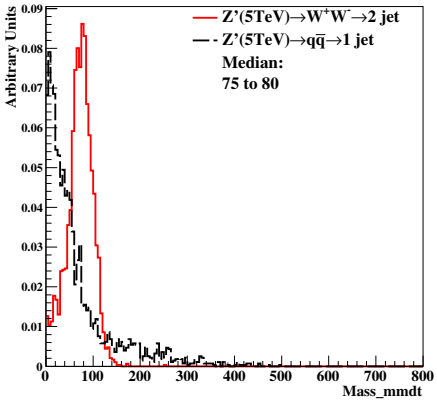
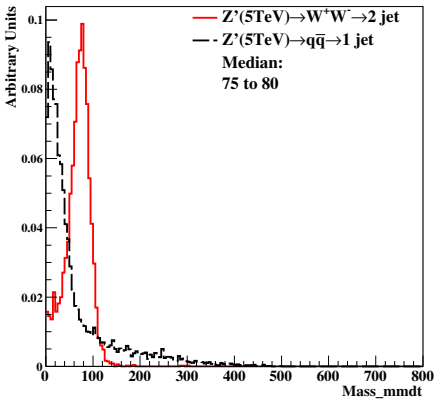
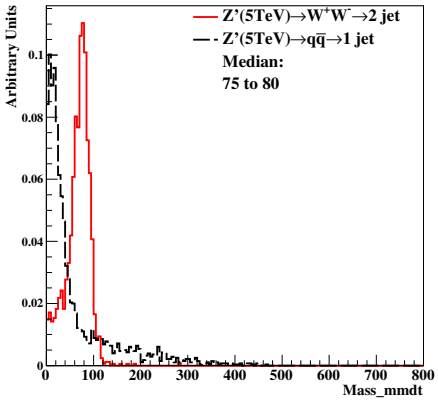


(a) 5TeV at 20×20(cm×cm) in cluster



(b) 5TeV at 5×5(cm×cm) in cluster

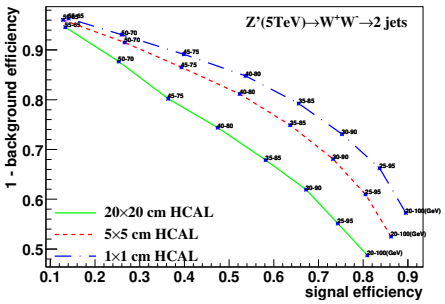


(c) 5TeV at 1×1(cm×cm) in cluster

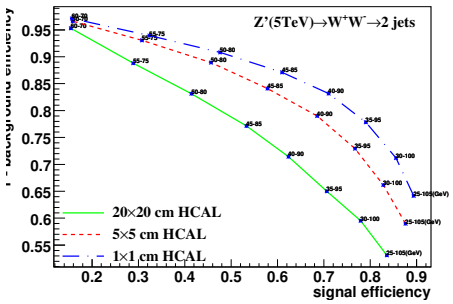
Figure 1: Distributions of mass soft drop at β=0, signal=ww, in 5TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.

1. **Studies of signal and background separation using Mass soft drop at $\beta = 0$ using fix central and change width method**

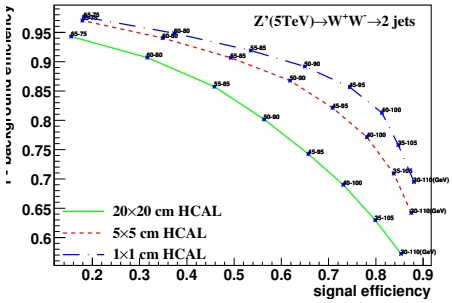
2. **Studies of signal and background separation using Mass soft drop at $\beta = 2$ using fix central and change width method**



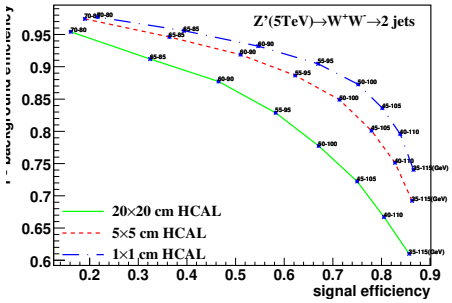
(a) Central at 60TeV change width in cluster



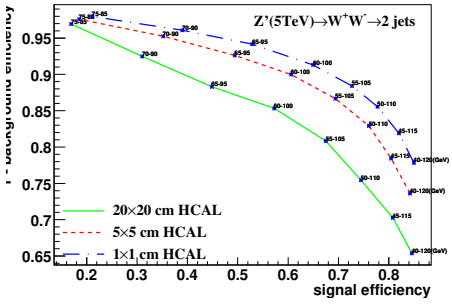
(b) Central at 65TeV change width in cluster



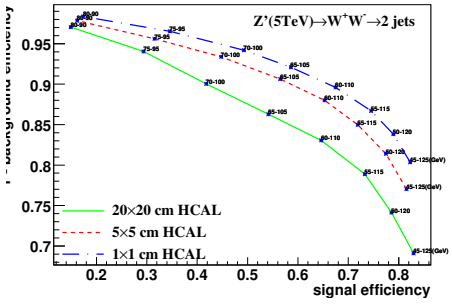
(c) Central at 70TeV change width in cluster



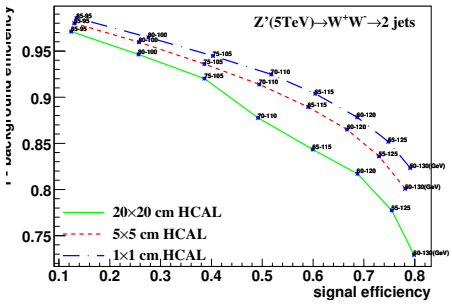
(d) Central at 75TeV change width in cluster



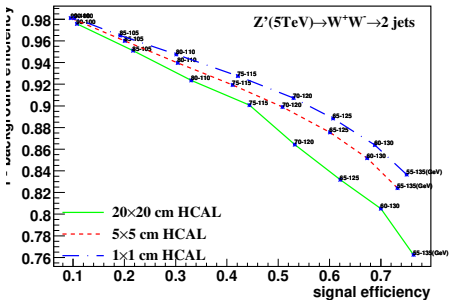
(e) Central at 80TeV change width in cluster



(f) Central at 85TeV change width in cluster

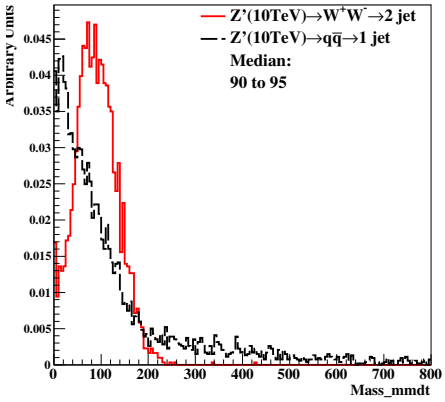


(g) Central at 90TeV change width in cluster

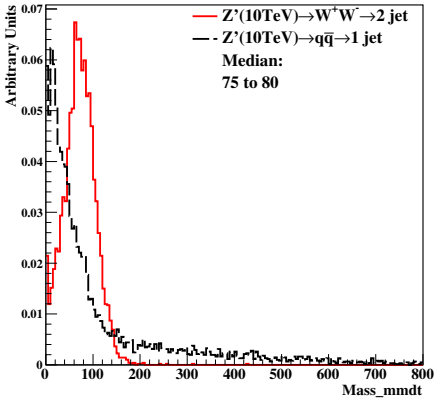


(h) Central at 95TeV change width in cluster

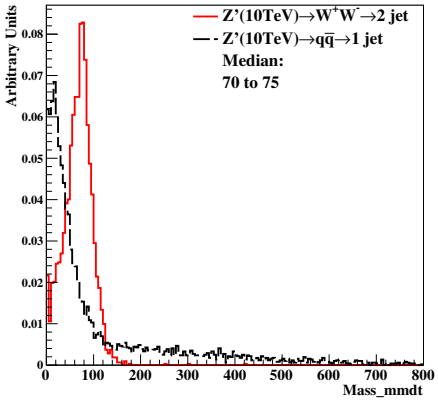
Figure 2: study of "fix central and change width" in mass soft drop at β=0, signal=ww, in 5TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 10TeV at 20×20(cm×cm) in cluster

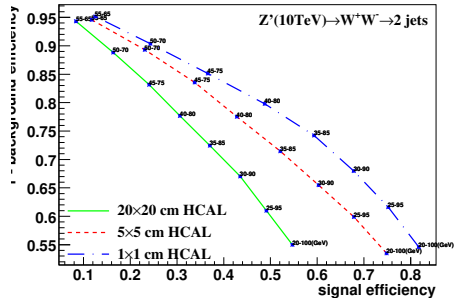


(b) 10TeV at 5×5(cm×cm) in cluster

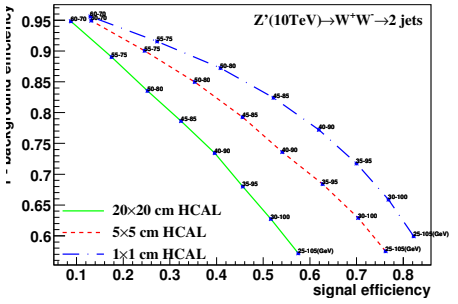


(c) 10TeV at 1×1(cm×cm) in cluster

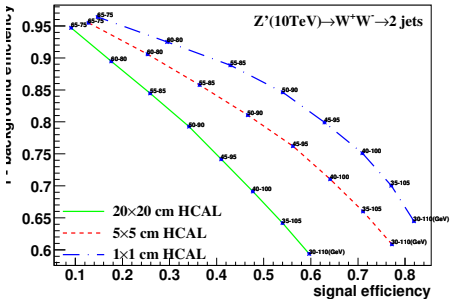
Figure 3: Distributions of mass soft drop at β=0, signal=ww, in 10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



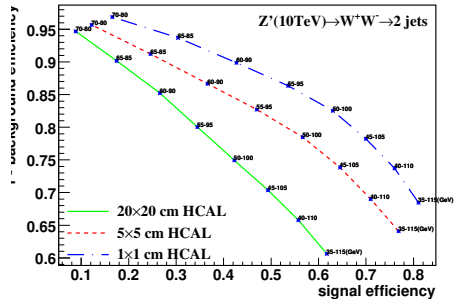
(a) Central at 60TeV change width in cluster



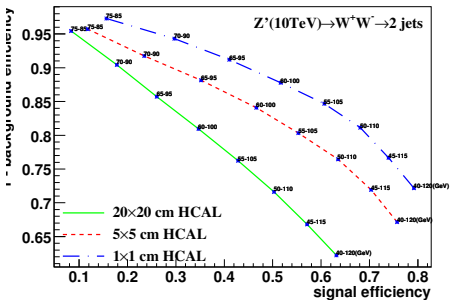
(b) Central at 65TeV change width in cluster



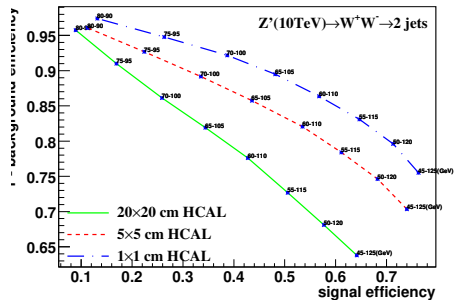
(c) Central at 70TeV change width in cluster



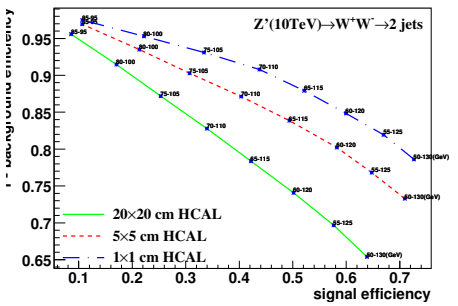
(d) Central at 75TeV change width in cluster



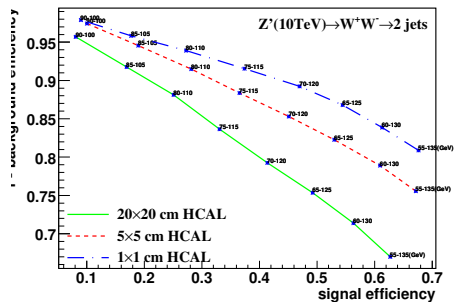
(e) Central at 80TeV change width in cluster



(f) Central at 85TeV change width in cluster

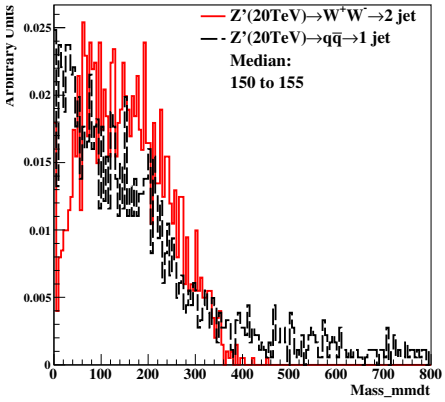


(g) Central at 90TeV change width in cluster

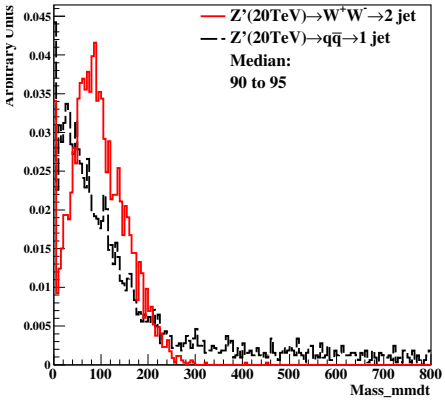


(h) Central at 95TeV change width in cluster

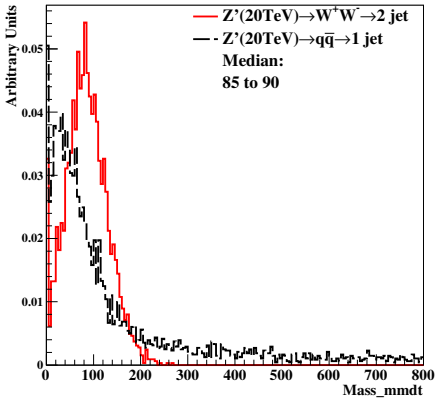
Figure 4: study of "fix central and change width" in mass soft drop at β=0, signal=ww, in 10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 20TeV at 20×20(cm×cm) in cluster

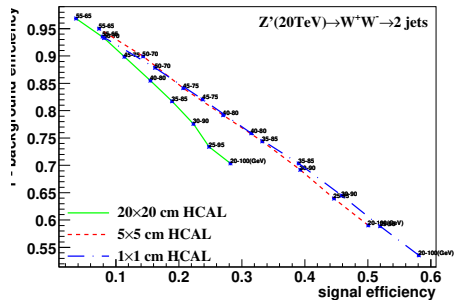


(b) 20TeV at 5×5(cm×cm) in cluster

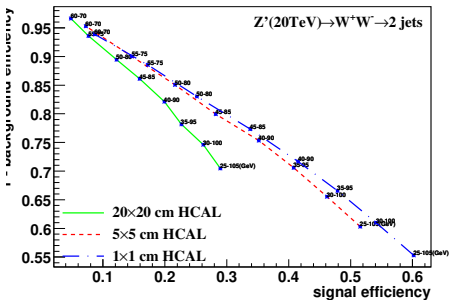


(c) 20TeV at 1×1(cm×cm) in cluster

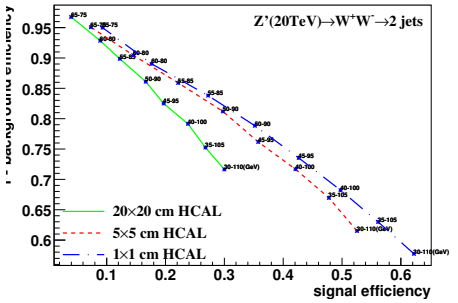
Figure 5: Distributions of mass soft drop at β=0, signal=ww, in 20TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



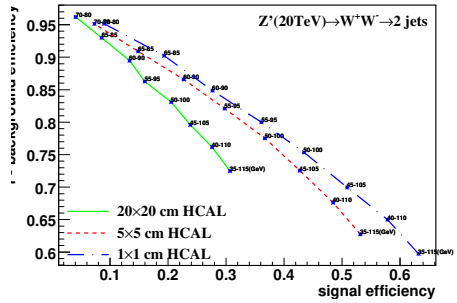
(a) Central at 60TeV change width in cluster



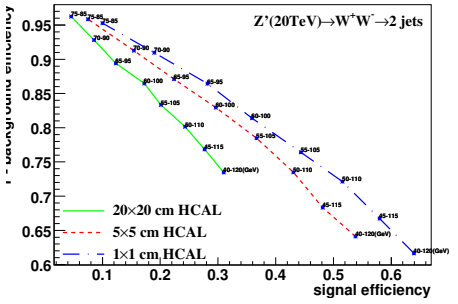
(b) Central at 65TeV change width in cluster



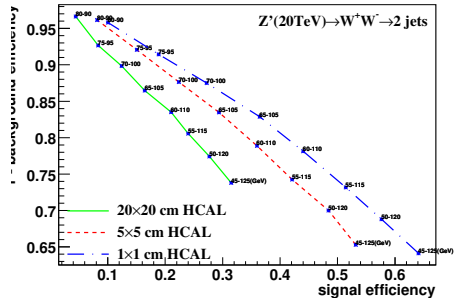
(c) Central at 70TeV change width in cluster



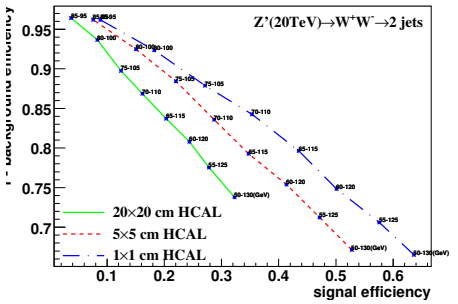
(d) Central at 75TeV change width in cluster



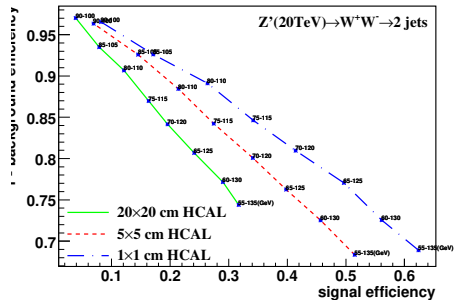
(e) Central at 80TeV change width in cluster



(f) Central at 85TeV change width in cluster

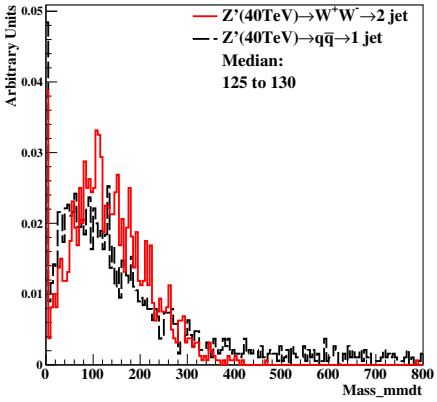


(g) Central at 90TeV change width in cluster

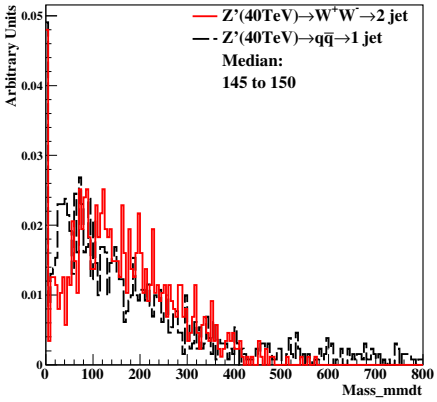


(h) Central at 95TeV change width in cluster

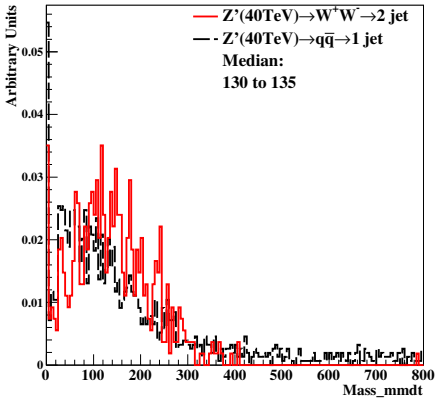
Figure 6: study of "fix central and change width" in mass soft drop at β=0, signal=ww, in 20TeV energy of collision in different detector sizes. Cell size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 40TeV at 20×20(cm×cm) in cluster

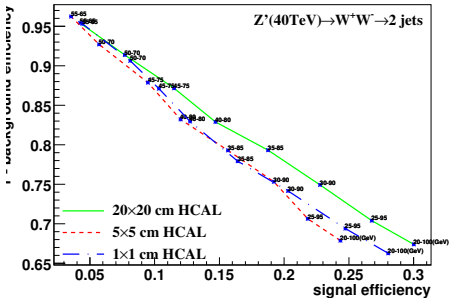


(b) 40TeV at 5×5(cm×cm) in cluster

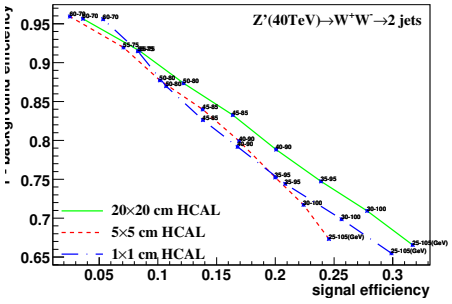


(c) 40TeV at 1×1(cm×cm) in cluster

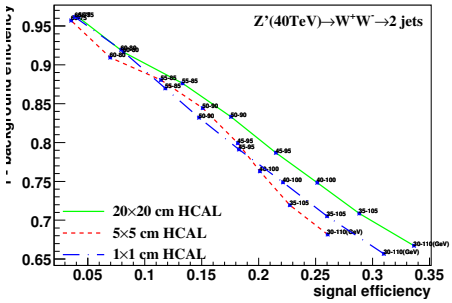
Figure 7: Distributions of mass soft drop at β=0, signal=ww, in 40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



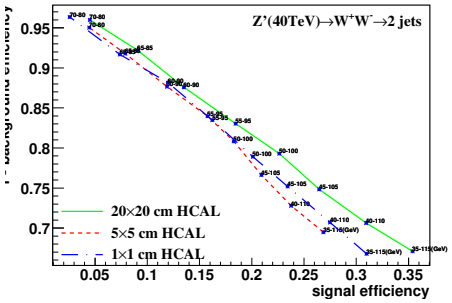
(a) Central at 60TeV change width in cluster



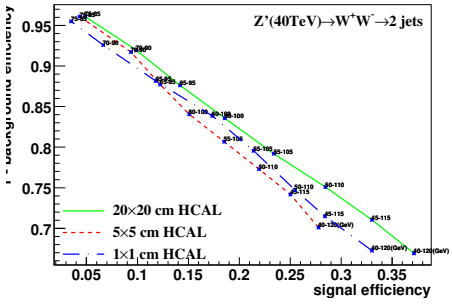
(b) Central at 65TeV change width in cluster



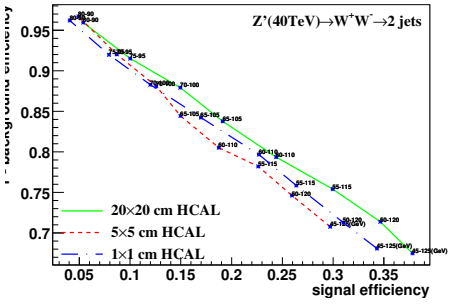
(c) Central at 70TeV change width in cluster



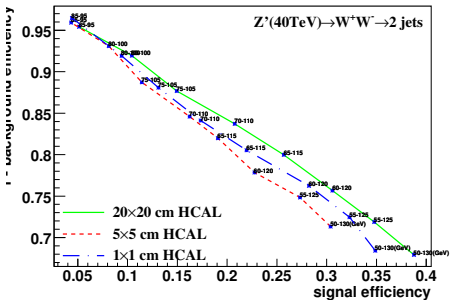
(d) Central at 75TeV change width in cluster



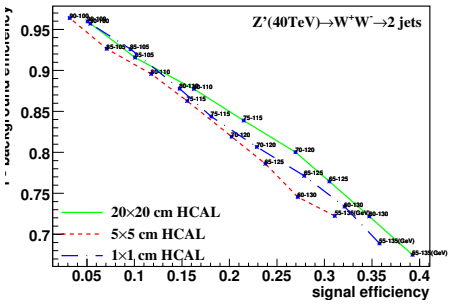
(e) Central at 80TeV change width in cluster



(f) Central at 85TeV change width in cluster

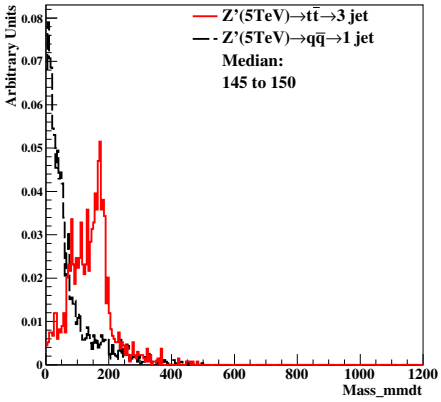


(g) Central at 90TeV change width in cluster

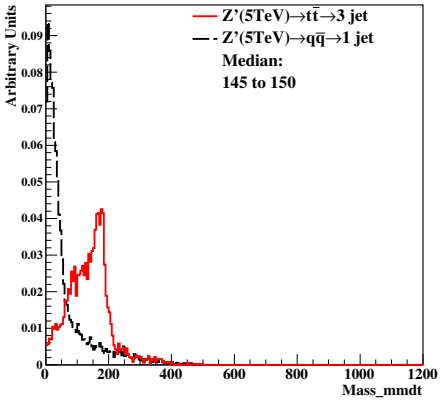


(h) Central at 95TeV change width in cluster

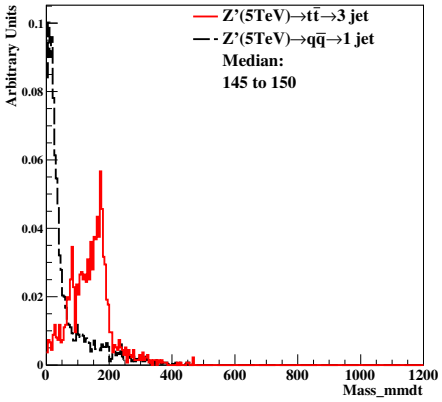
Figure 8: study of "fix central and change width" in mass soft drop at β=0, signal=ww, in 40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 5TeV at 20×20(cm×cm) in cluster

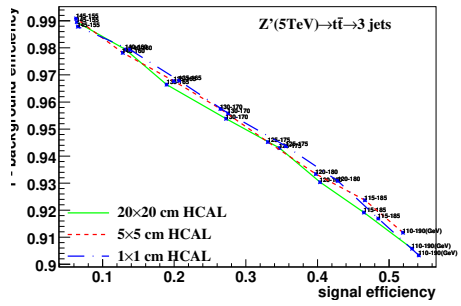


(b) 5TeV at 5×5(cm×cm) in cluster

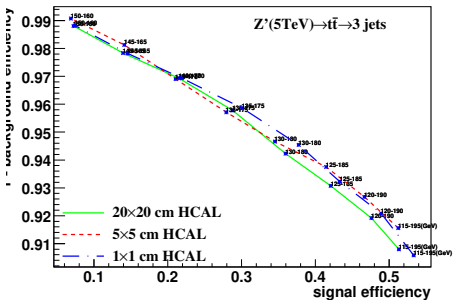


(c) 5TeV at 1×1(cm×cm) in cluster

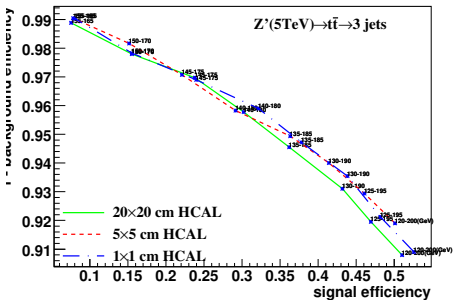
Figure 9: Distributions of mass soft drop at β=0, signal=tt, in 5TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



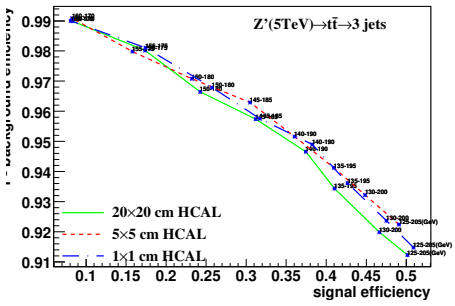
(a) Central at 150TeV change width in cluster



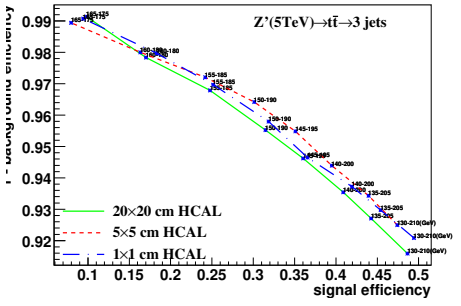
(b) Central at 155TeV change width in cluster



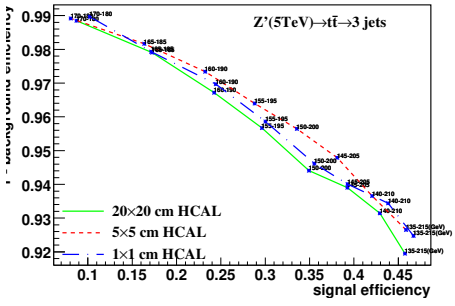
(c) Central at 160TeV change width in cluster



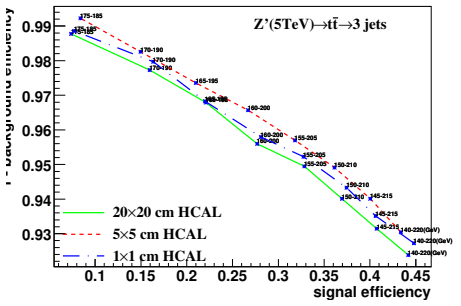
(d) Central at 165TeV change width in cluster



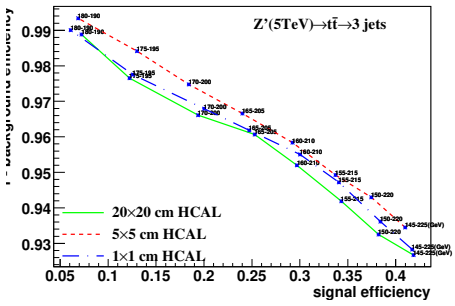
(e) Central at 170TeV change width in cluster



(f) Central at 175TeV change width in cluster

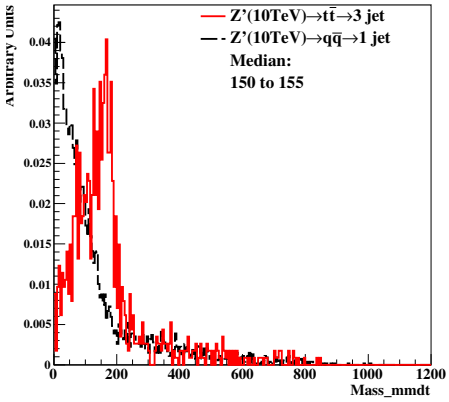


(g) Central at 180TeV change width in cluster

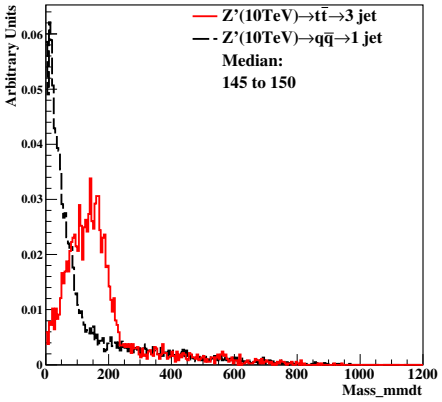


(h) Central at 185TeV change width in cluster

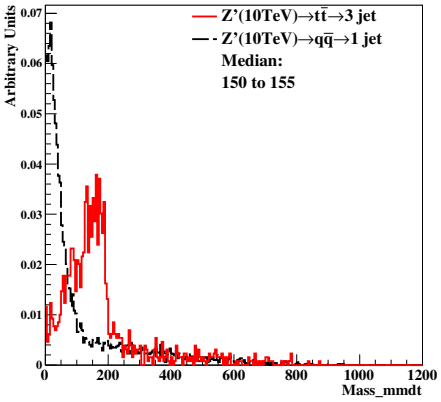
Figure 10: study of "fix central and change width" in mass soft drop at β=0, signal=tt, in 5TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 10TeV at 20×20(cm×cm) in cluster

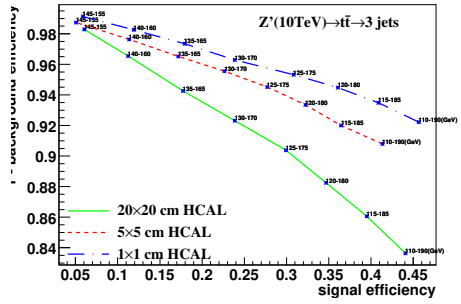


(b) 10TeV at 5×5(cm×cm) in cluster

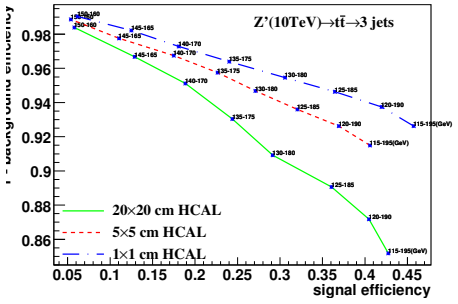


(c) 10TeV at 1×1(cm×cm) in cluster

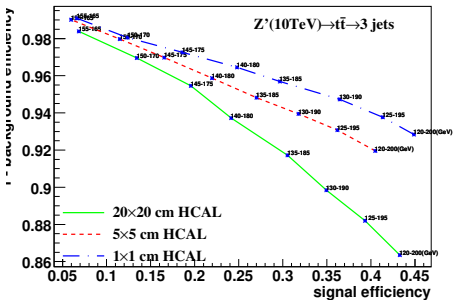
Figure 11: Distributions of mass soft drop at β=0, signal=tt, in 10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



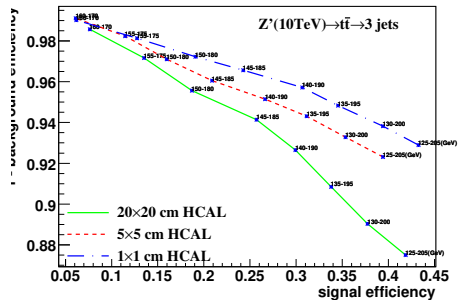
(a) Central at 150TeV change width in cluster



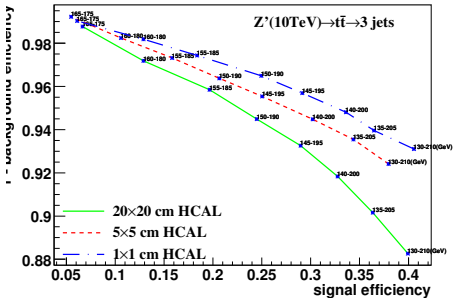
(b) Central at 155TeV change width in cluster



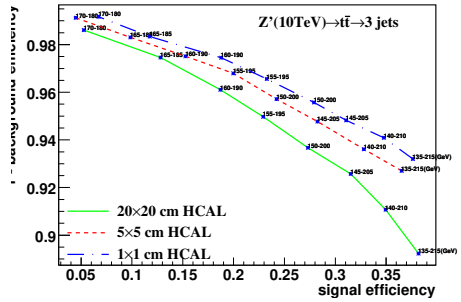
(c) Central at 160TeV change width in cluster



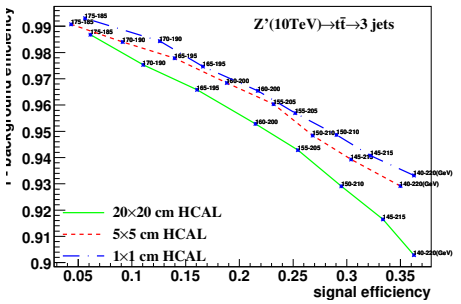
(d) Central at 165TeV change width in cluster



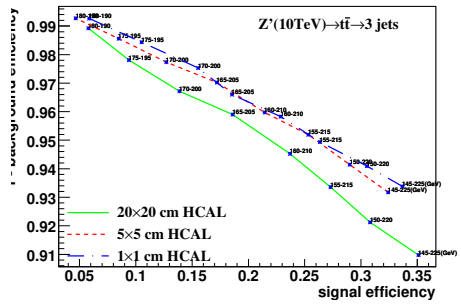
(e) Central at 170TeV change width in cluster



(f) Central at 175TeV change width in cluster

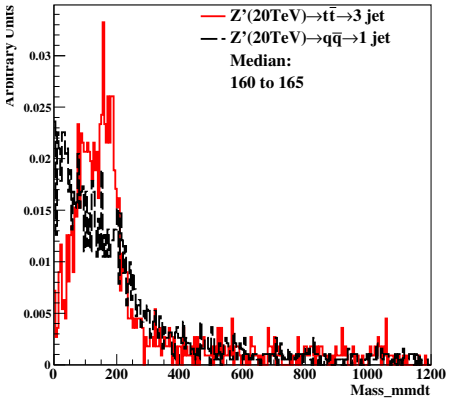


(g) Central at 180TeV change width in cluster

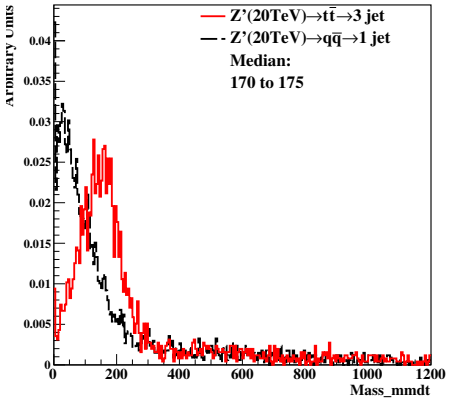


(h) Central at 185TeV change width in cluster

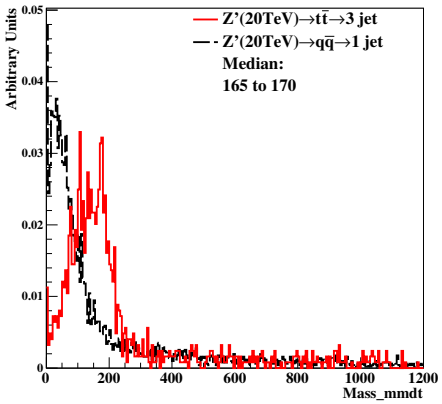
Figure 12: study of "fix central and change width" in mass soft drop at β=0, signal=tt, in 10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 20TeV at 20×20(cm×cm) in cluster

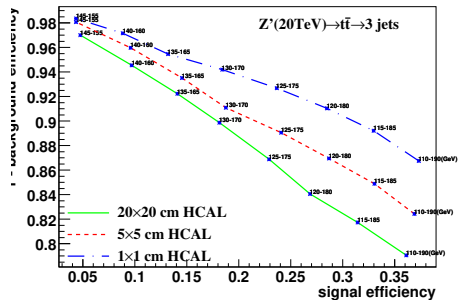


(b) 20TeV at 5×5(cm×cm) in cluster

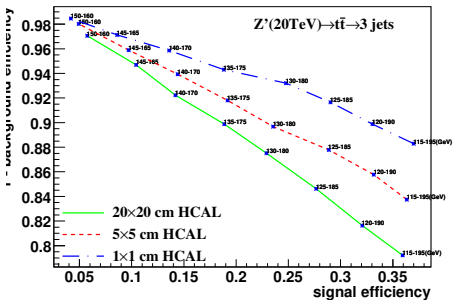


(c) 20TeV at 1×1(cm×cm) in cluster

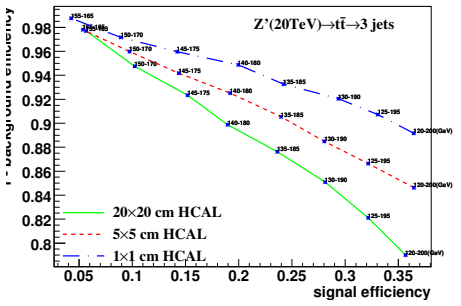
Figure 13: Distributions of mass soft drop at β=0, signal=tt, in 20TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



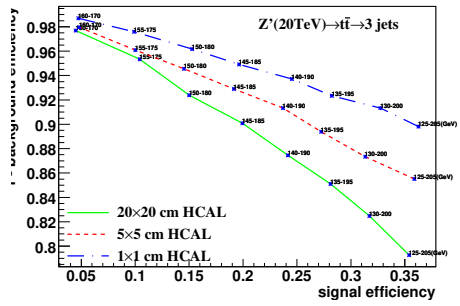
(a) Central at 150TeV change width in cluster



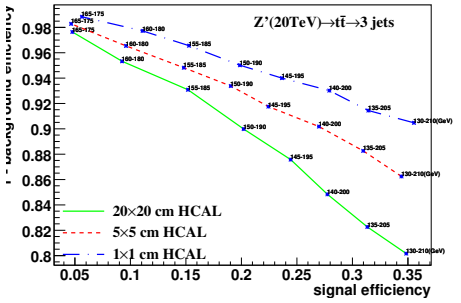
(b) Central at 155TeV change width in cluster



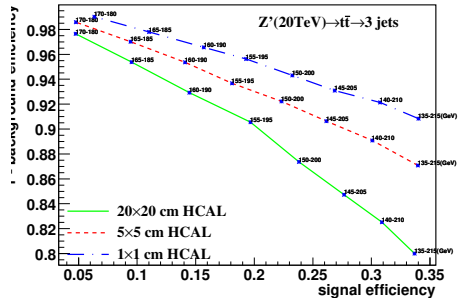
(c) Central at 160TeV change width in cluster



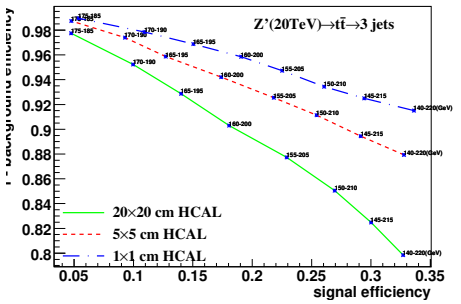
(d) Central at 165TeV change width in cluster



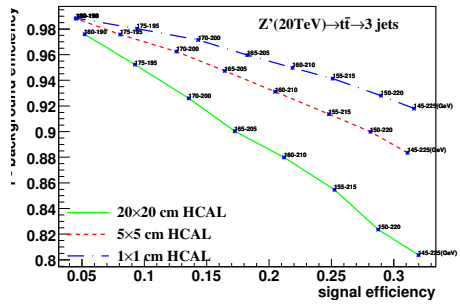
(e) Central at 170TeV change width in cluster



(f) Central at 175TeV change width in cluster

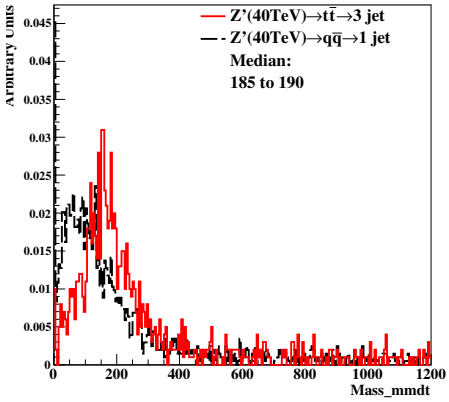


(g) Central at 180TeV change width in cluster

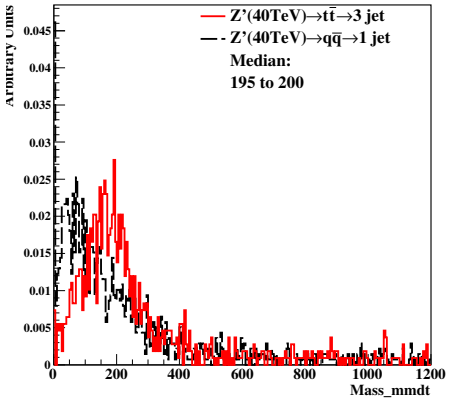


(h) Central at 185TeV change width in cluster

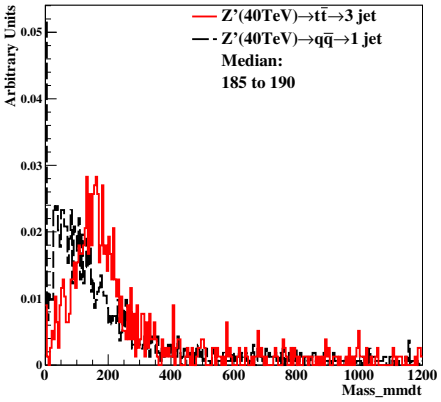
Figure 14: study of "fix central and change width" in mass soft drop at β=0, signal=tt, in 20TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 40TeV at 20×20(cm×cm) in cluster

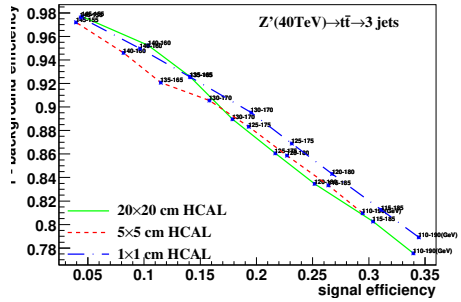


(b) 40TeV at 5×5(cm×cm) in cluster

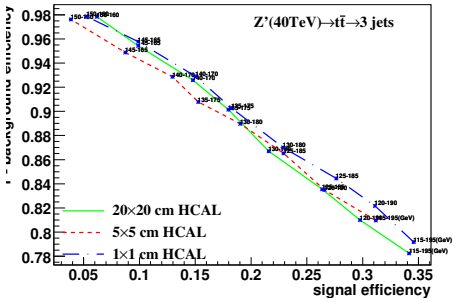


(c) 40TeV at 1×1(cm×cm) in cluster

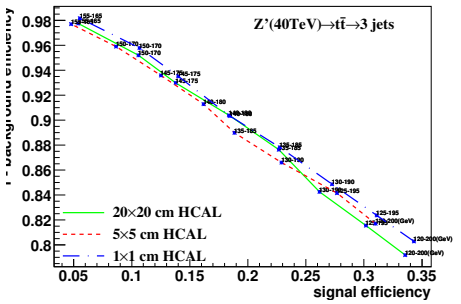
Figure 15: Distributions of mass soft drop at β=0, signal=tt, in 40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



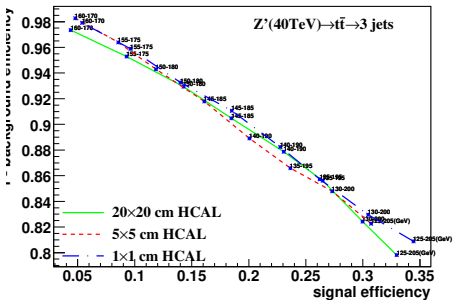
(a) Central at 150TeV change width in cluster



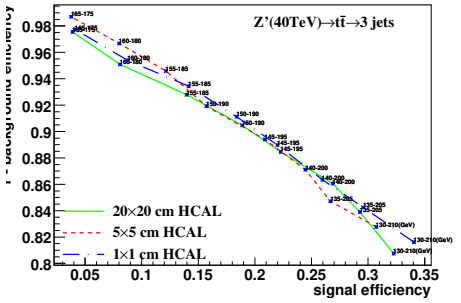
(b) Central at 155TeV change width in cluster



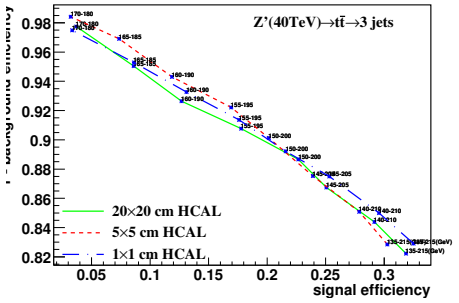
(c) Central at 160TeV change width in cluster



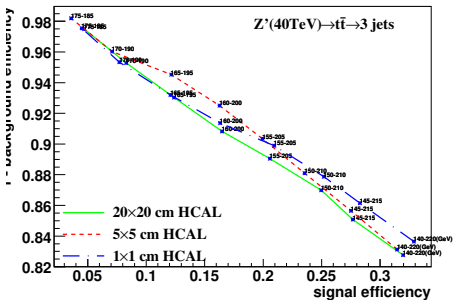
(d) Central at 165TeV change width in cluster



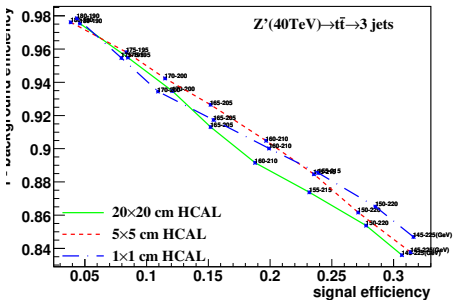
(e) Central at 170TeV change width in cluster



(f) Central at 175TeV change width in cluster

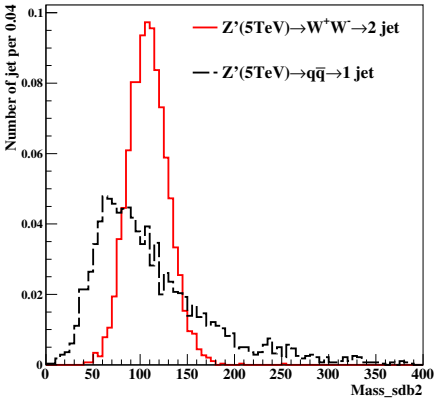


(g) Central at 180TeV change width in cluster

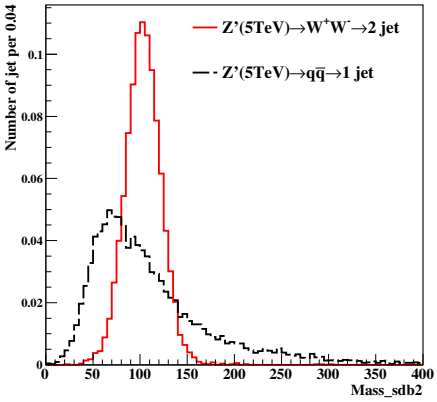


(h) Central at 185TeV change width in cluster

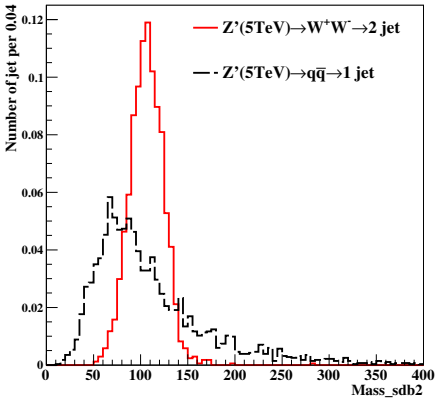
Figure 16: study of "fix central and change width" in mass soft drop at β=0, signal=tt, in 40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 5TeV at 20×20(cm×cm) in cluster

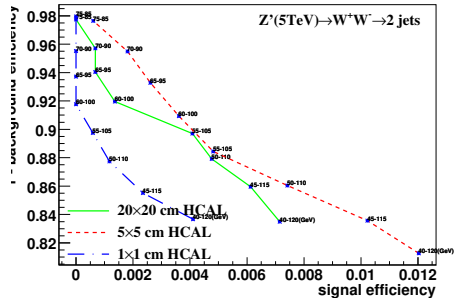


(b) 5TeV at 5×5(cm×cm) in cluster

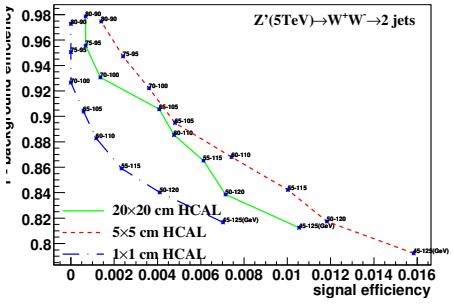


(c) 5TeV at 1×1(cm×cm) in cluster

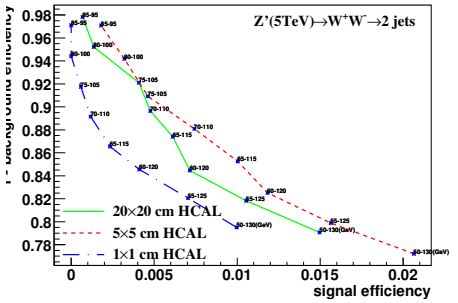
Figure 17: Distributions of mass soft drop at β=2, signal=ww, in 5TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



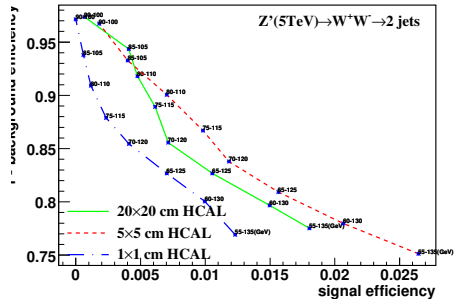
(a) Central at 80TeV change width in cluster



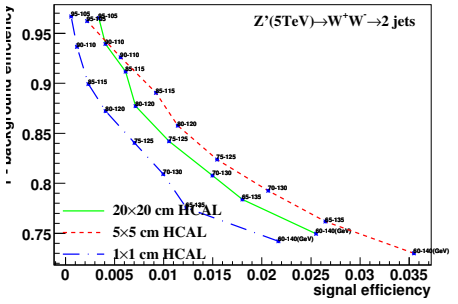
(b) Central at 85TeV change width in cluster



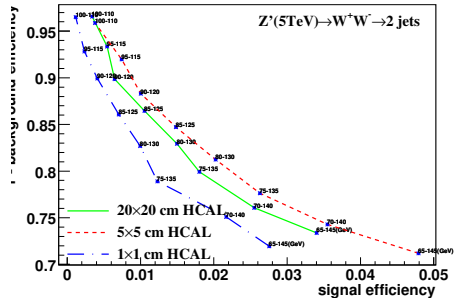
(c) Central at 90TeV change width in cluster



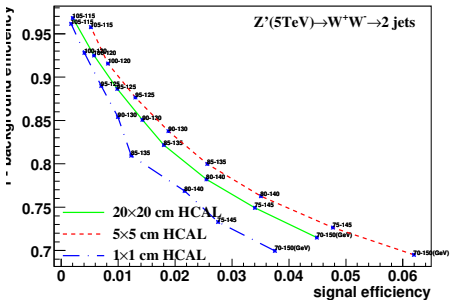
(d) Central at 95TeV change width in cluster



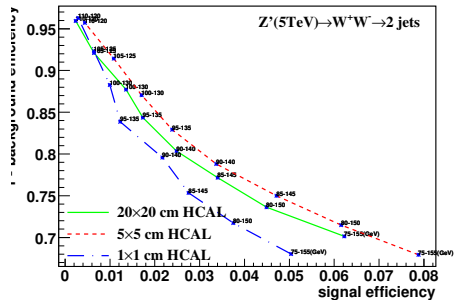
(e) Central at 100TeV change width in cluster



(f) Central at 105TeV change width in cluster

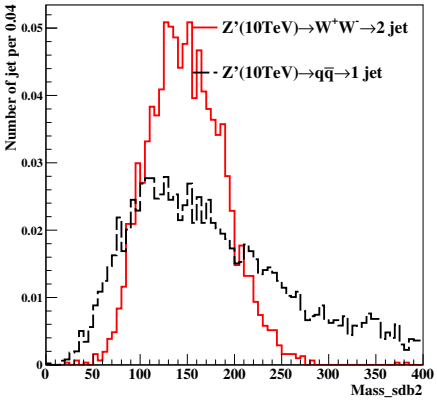


(g) Central at 110TeV change width in cluster

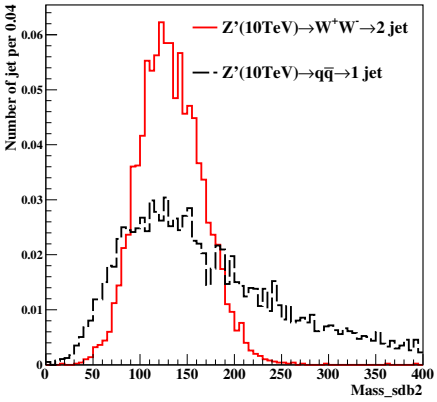


(h) Central at 115TeV change width in cluster

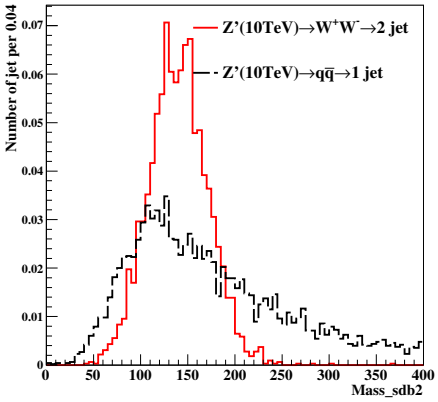
Figure 18: study of "fix central and change width" in mass soft drop at β=2, signal=ww, in 5TeV energy of collision in different detector sizes. Cell size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 10TeV at 20×20(cm×cm) in cluster

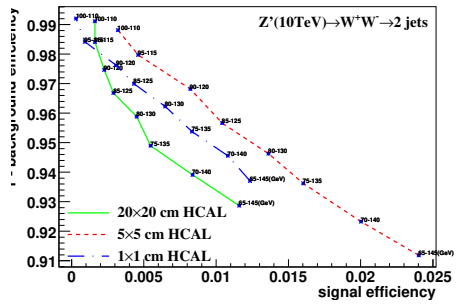


(b) 10TeV at 5×5(cm×cm) in cluster

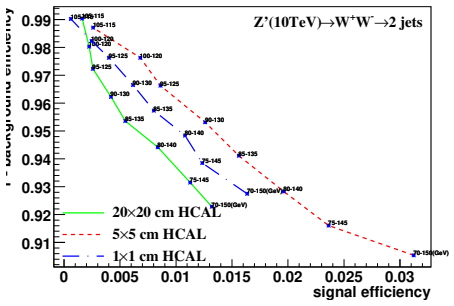


(c) 10TeV at 1×1(cm×cm) in cluster

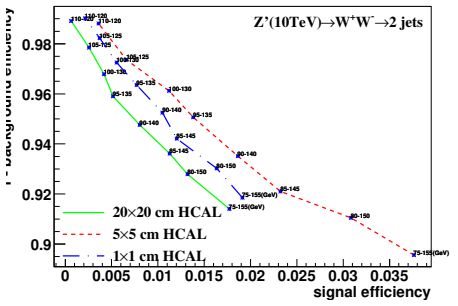
Figure 19: Distributions of mass soft drop at β=2, signal=ww, in 10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



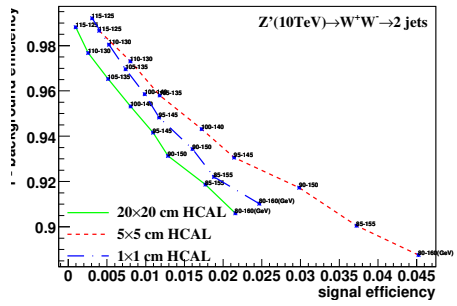
(a) Central at 105TeV change width in cluster



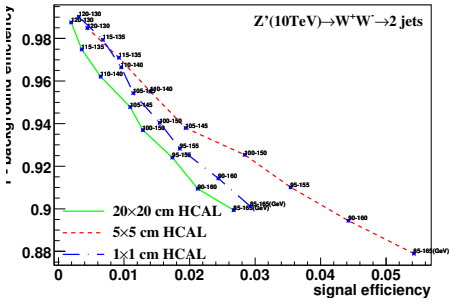
(b) Central at 110TeV change width in cluster



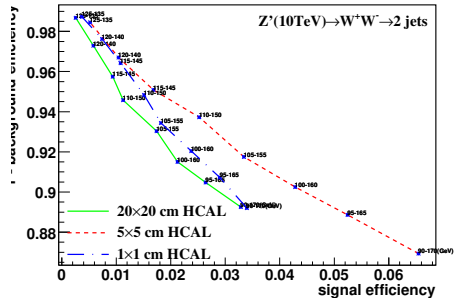
(c) Central at 115TeV change width in cluster



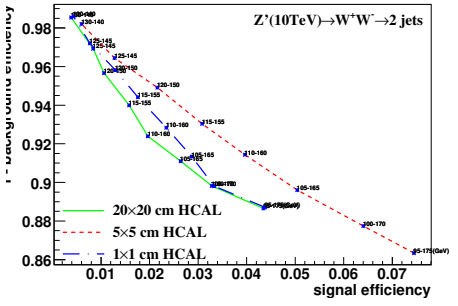
(d) Central at 120TeV change width in cluster



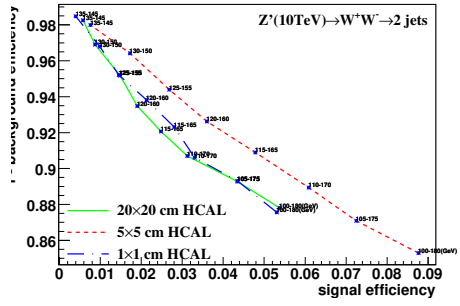
(e) Central at 125TeV change width in cluster



(f) Central at 130TeV change width in cluster

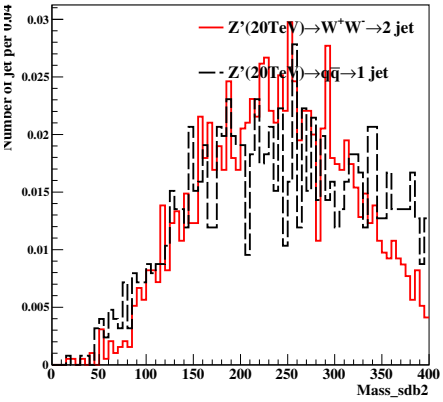


(g) Central at135TeV change width in cluster

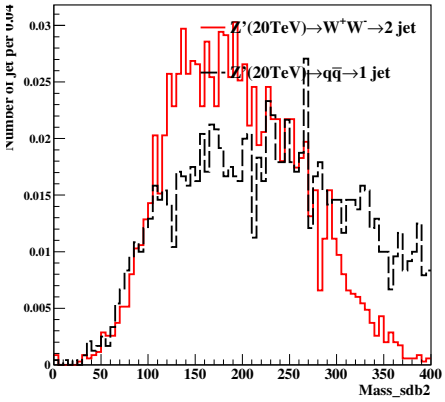


(h) Central at 140TeV change width in cluster

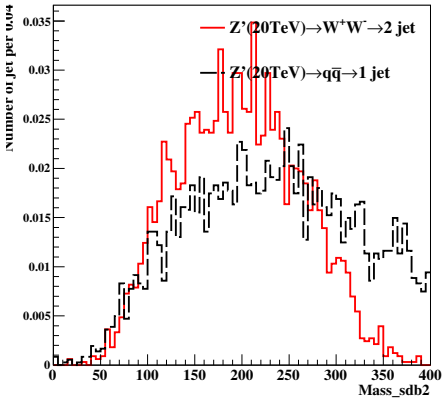
Figure 20: study of "fix central and change width" in mass soft drop at β=2, signal=ww, in 10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 20TeV at 20×20(cm×cm) in cluster

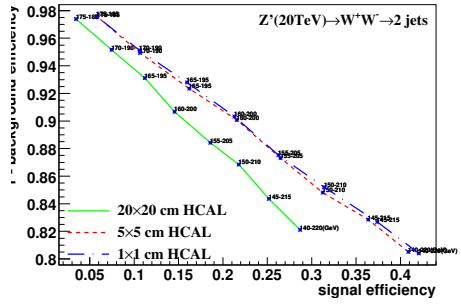


(b) 20TeV at 5×5(cm×cm) in cluster

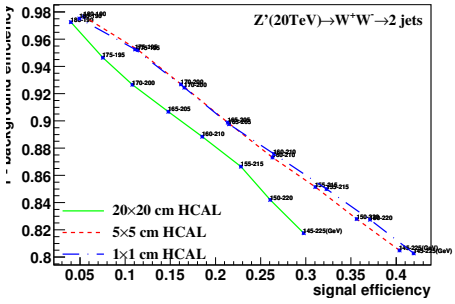


(c) 20TeV at 1×1(cm×cm) in cluster

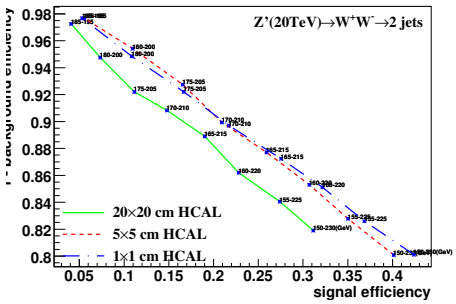
Figure 21: Distributions of mass soft drop at β=2, signal=ww, in 20TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



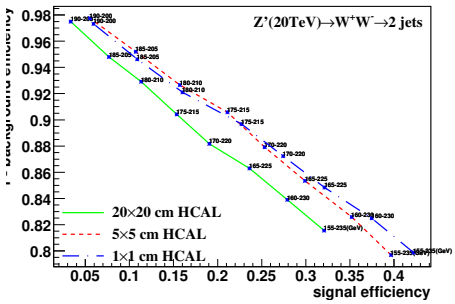
(a) Central at 180TeV change width in cluster



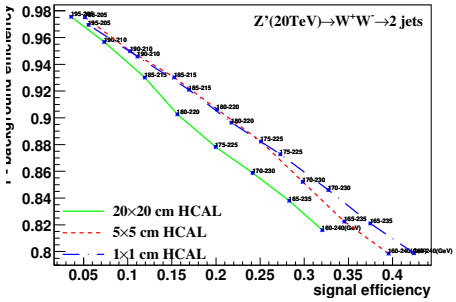
(b) Central at 185TeV change width in cluster



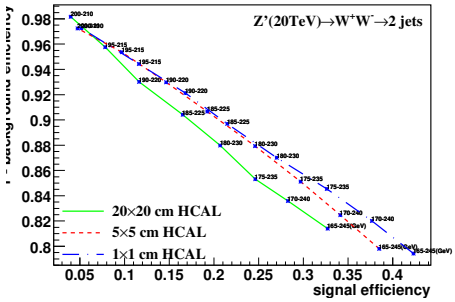
(c) Central at 190TeV change width in cluster



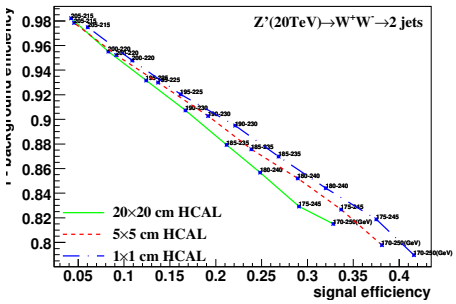
(d) Central at 195TeV change width in cluster



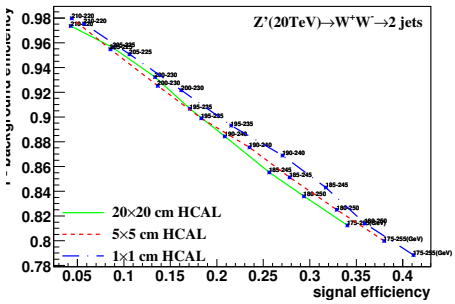
(e) Central at 200TeV change width in cluster



(f) Central at 205TeV change width in cluster

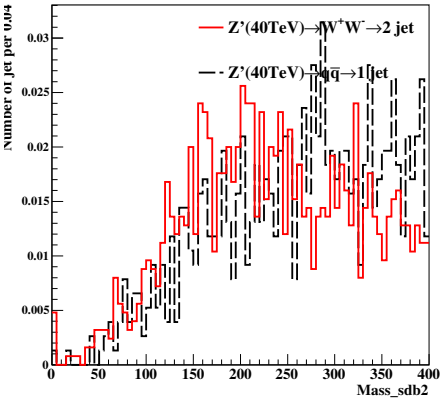


(g) Central at 210TeV change width in cluster

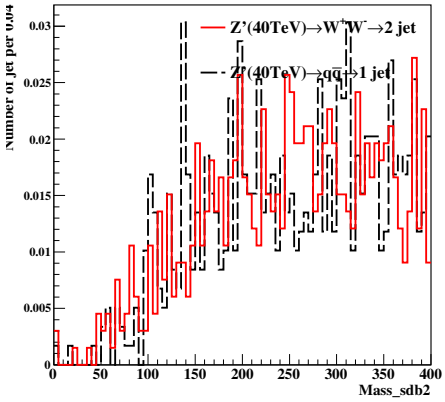


(h) Central at 215TeV change width in cluster

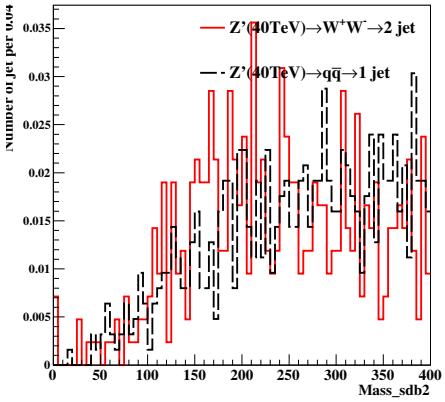
Figure 22: study of "fix central and change width" in mass soft drop at β=2, signal=ww, in 20TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 40TeV at 20×20(cm×cm) in cluster

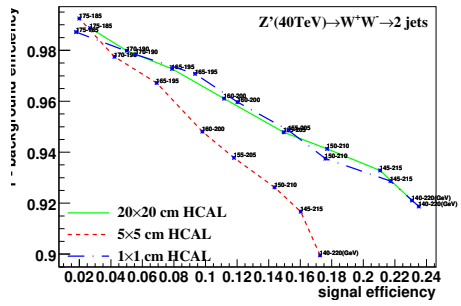


(b) 40TeV at 5×5(cm×cm) in cluster

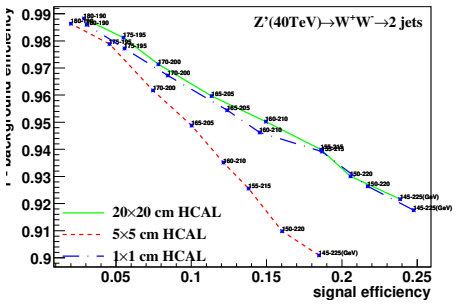


(c) 40TeV at 1×1(cm×cm) in cluster

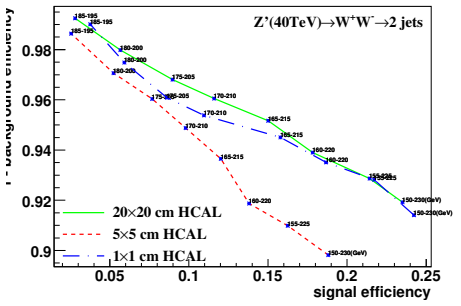
Figure 23: Distributions of mass soft drop at β=2, signal=ww, in 40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



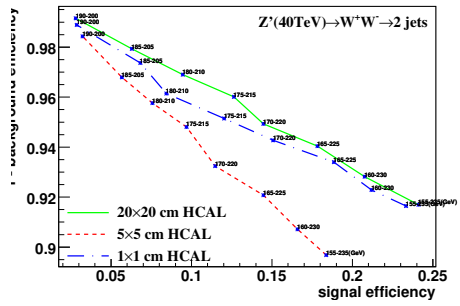
(a) Central at 180TeV change width in cluster



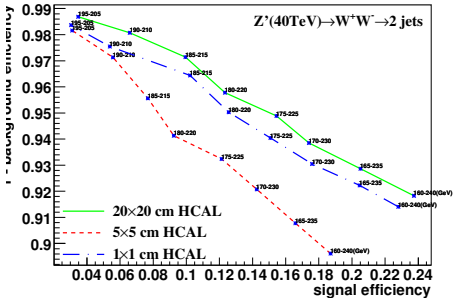
(b) Central at 185TeV change width in cluster



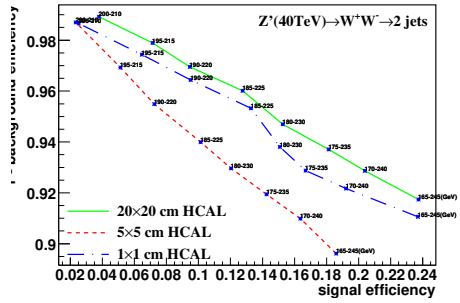
(c) Central at 190TeV change width in cluster



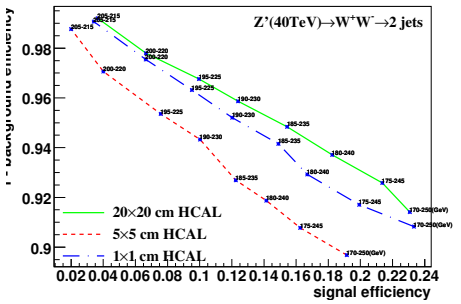
(d) Central at 195TeV change width in cluster



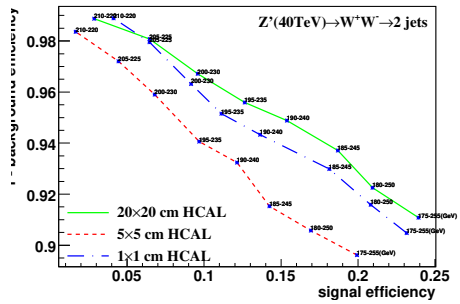
(e) Central at 200TeV change width in cluster



(f) Central at 205TeV change width in cluster

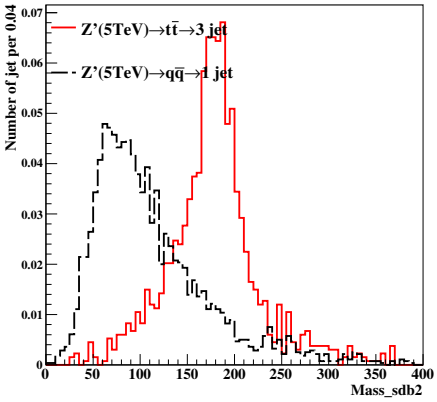


(g) Central at 210TeV change width in cluster

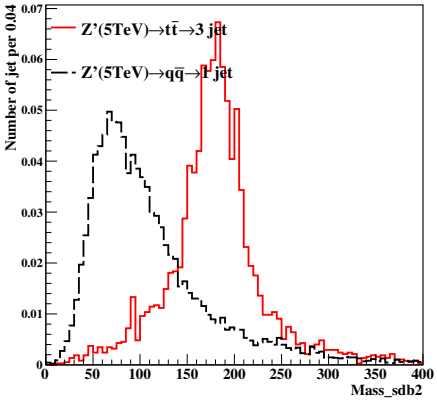


(h) Central at 215TeV change width in cluster

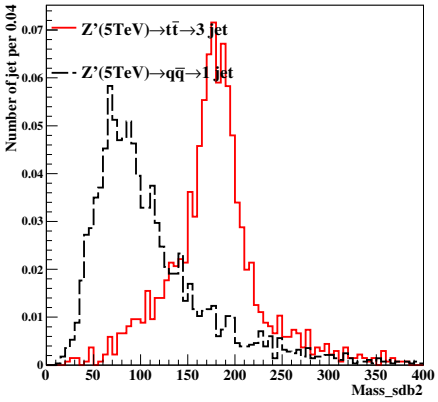
Figure 24: study of "fix central and change width" in mass soft drop at β=2, signal=ww, in 40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 5TeV at 20×20(cm×cm) in cluster

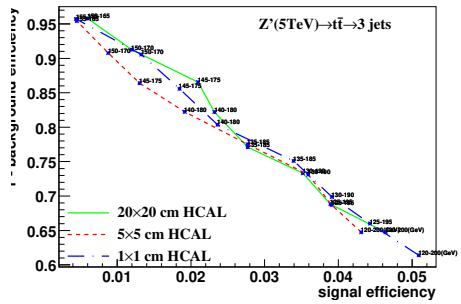


(b) 5TeV at 5×5(cm×cm) in cluster

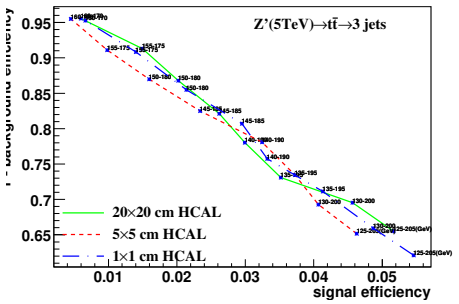


(c) 5TeV at 1×1(cm×cm) in cluster

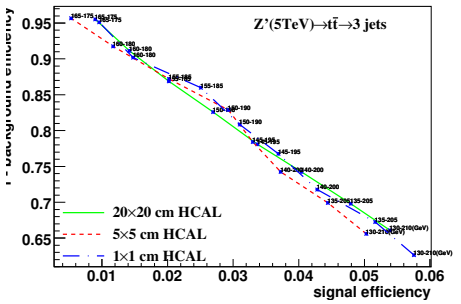
Figure 25: Distributions of mass soft drop at β=2, signal=tt, in 5TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



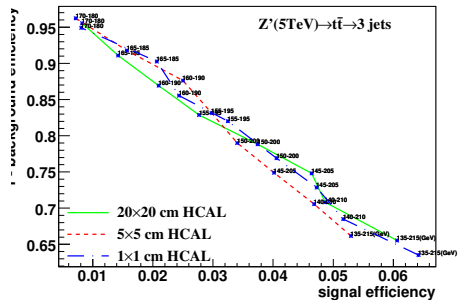
(a) Central at 160TeV change width in cluster



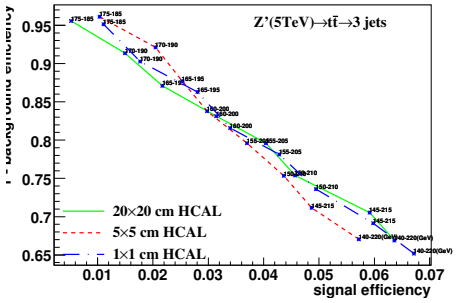
(b) Central at 165TeV change width in cluster



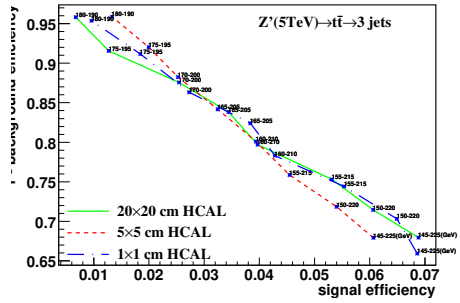
(c) Central at 170TeV change width in cluster



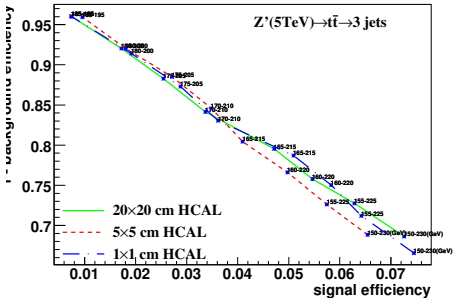
(d) Central at 175TeV change width in cluster



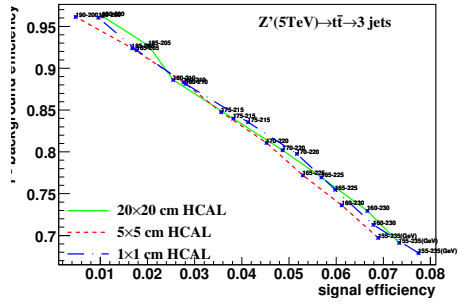
(e) Central at 180TeV change width in cluster



(f) Central at 185TeV change width in cluster

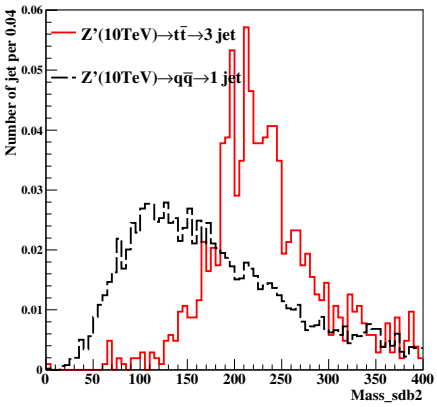


(g) Central at 190TeV change width in cluster

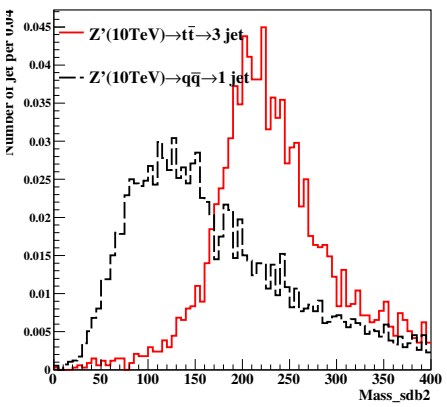


(h) Central at 195TeV change width in cluster

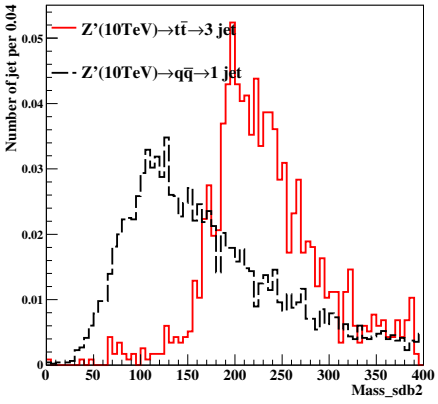
Figure 26: study of "fix central and change width" in mass soft drop at β=2, signal=tt, in 5TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 10TeV at 20×20(cm×cm) in cluster

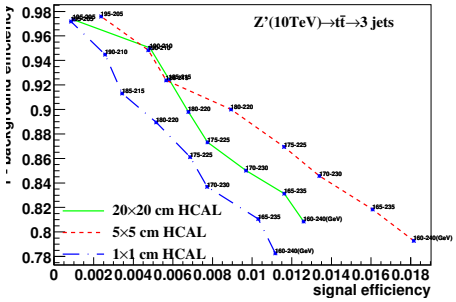


(b) 10TeV at 5×5(cm×cm) in cluster

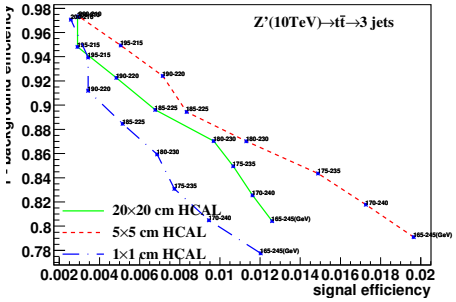


(c) 10TeV at 1×1(cm×cm) in cluster

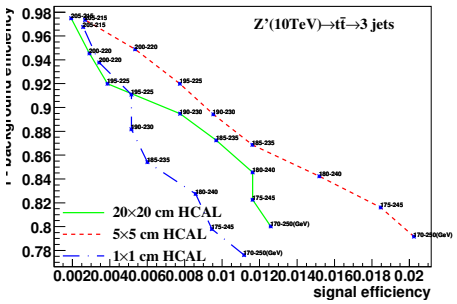
Figure 27: Distributions of mass soft drop at β=2, signal=tt, in 10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



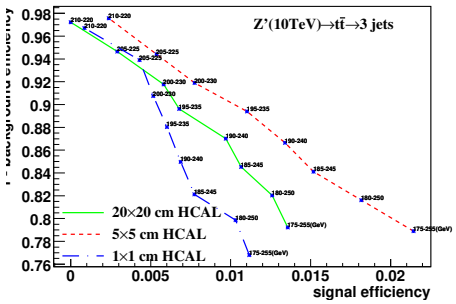
(a) Central at 200TeV change width in cluster



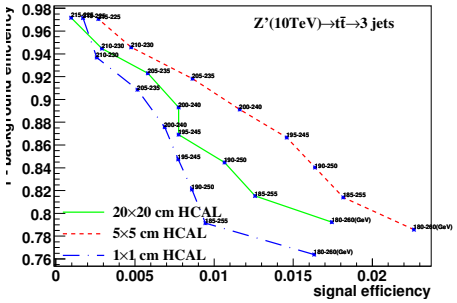
(b) Central at 205TeV change width in cluster



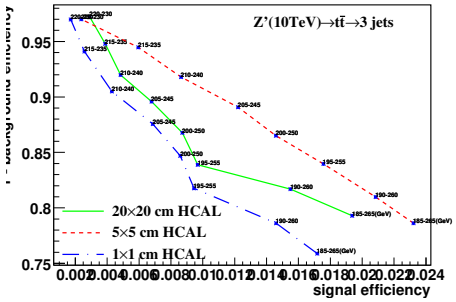
(c) Central at 210TeV change width in cluster



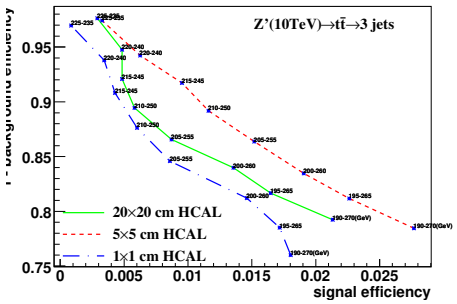
(d) Central at 215TeV change width in cluster



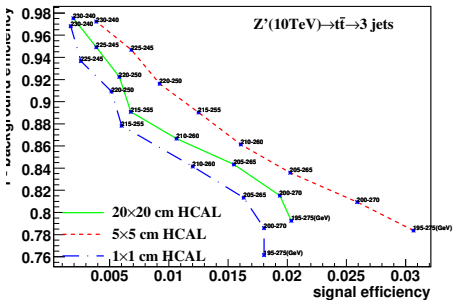
(e) Central at 220TeV change width in cluster



(f) Central at 225TeV change width in cluster

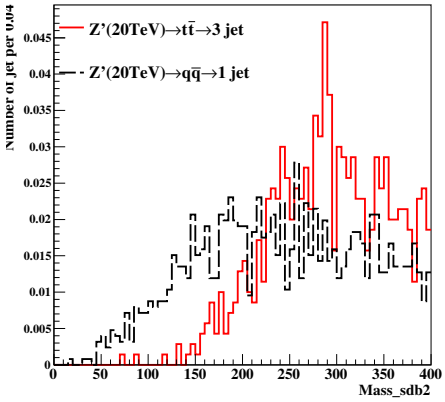


(g) Central at 230TeV change width in cluster

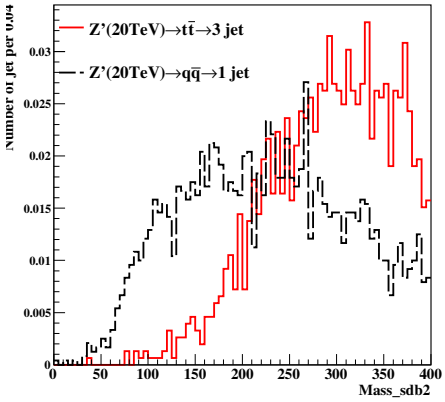


(h) Central at 235TeV change width in cluster

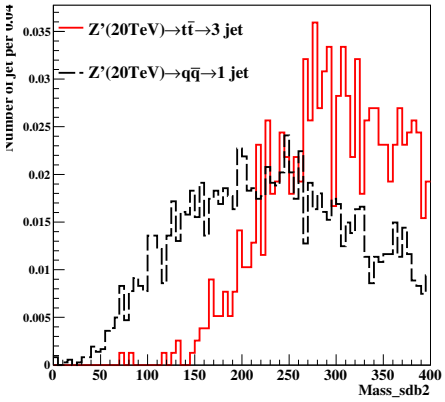
Figure 28: study of "fix central and change width" in mass soft drop at β=2, signal=tt, in 10TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 20TeV at 20×20(cm×cm) in cluster

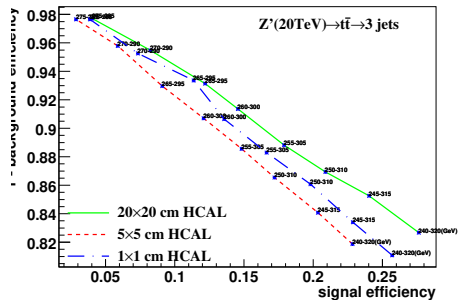


(b) 20TeV at 5×5(cm×cm) in cluster

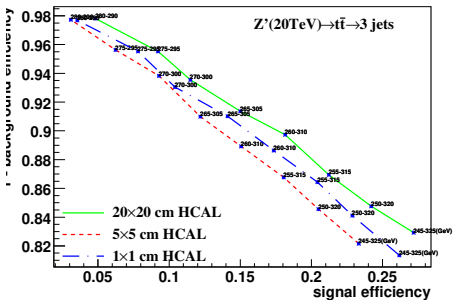


(c) 20TeV at 1×1(cm×cm) in cluster

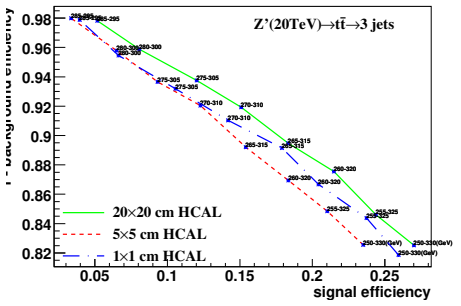
Figure 29: Distributions of mass soft drop at β=2, signal=tt, in 20TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



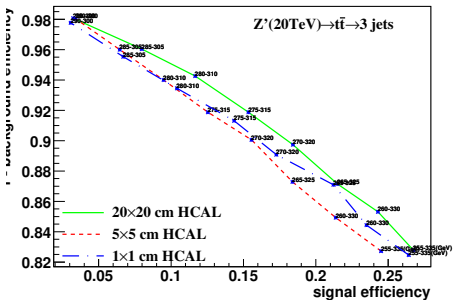
(a) Central at 280TeV change width in cluster



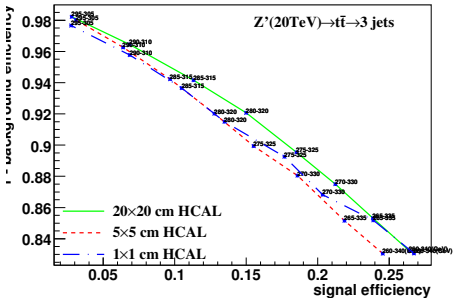
(b) Central at 285TeV change width in cluster



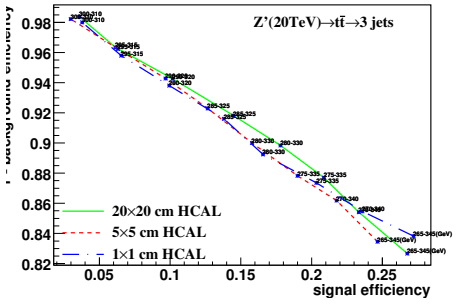
(c) Central at 290TeV change width in cluster



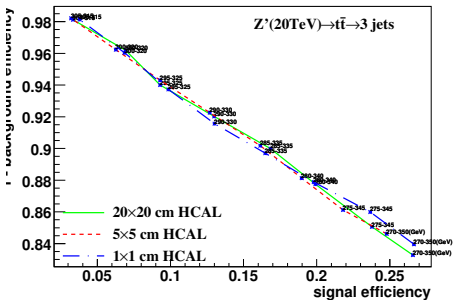
(d) Central at 295TeV change width in cluster



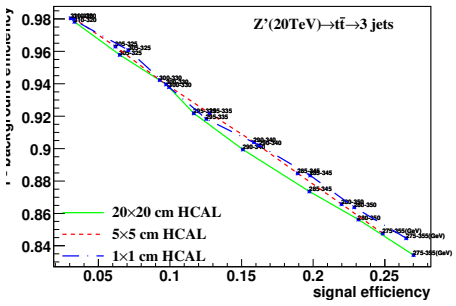
(e) Central at 300TeV change width in cluster



(f) Central at 305TeV change width in cluster

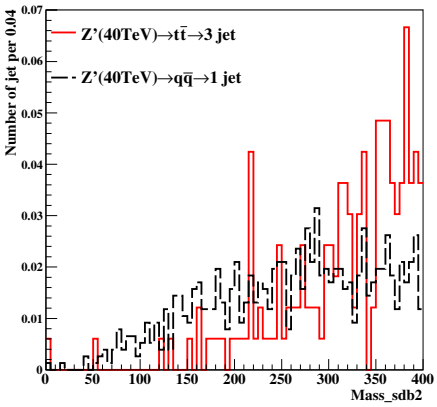


(g) Central at 310TeV change width in cluster

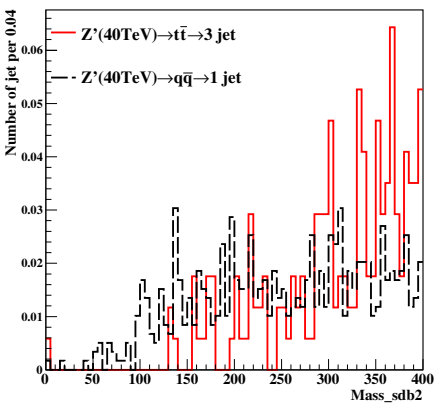


(h) Central at 315TeV change width in cluster

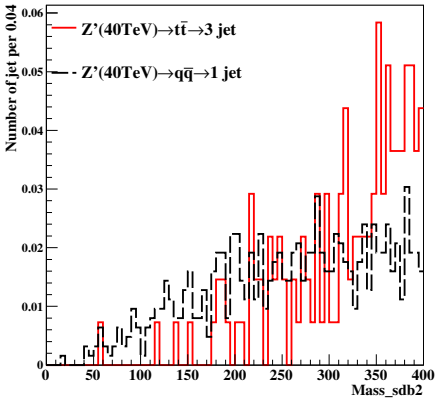
Figure 30: study of "fix central and change width" in mass soft drop at β=2, signal=tt, in 20TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



(a) 40TeV at 20×20(cm×cm) in cluster

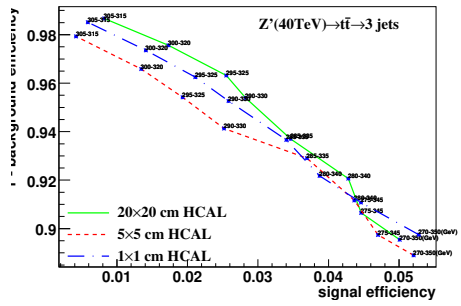


(b) 40TeV at 5×5(cm×cm) in cluster

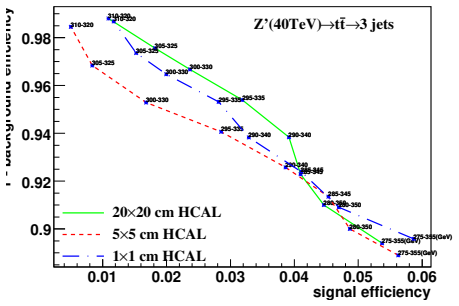


(c) 40TeV at 1×1(cm×cm) in cluster

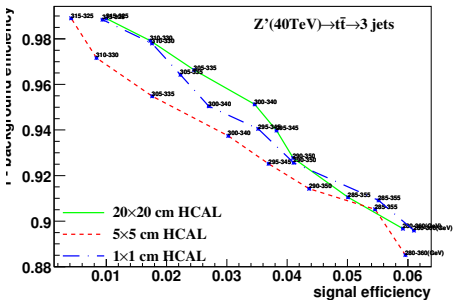
Figure 31: Distributions of mass soft drop at β=2, signal=tt, in 40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown here.



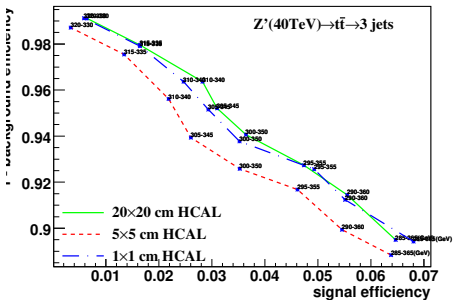
(a) Central at 310TeV change width in cluster



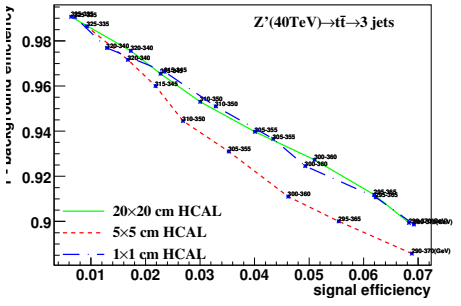
(b) Central at 315TeV change width in cluster



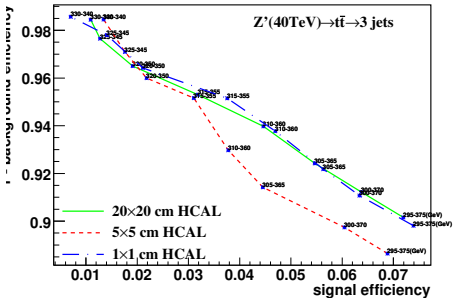
(c) Central at 320TeV change width in cluster



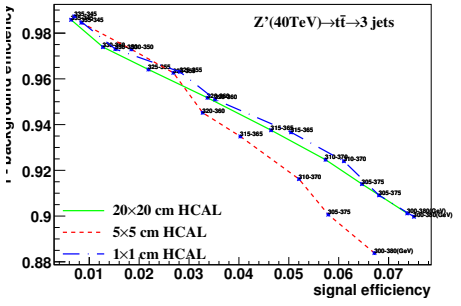
(d) Central at 325TeV change width in cluster



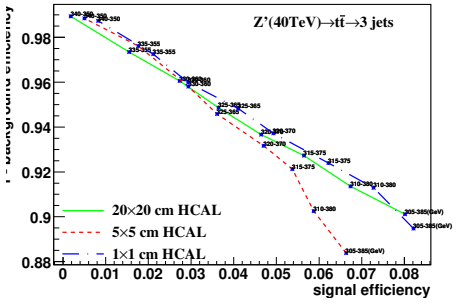
(e) Central at 330TeV change width in cluster



(f) Central at 335TeV change width in cluster

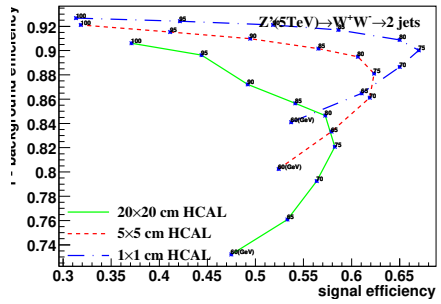


(g) Central at 340TeV change width in cluster

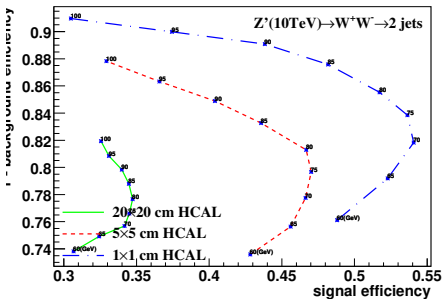


(h) Central at 345TeV change width in cluster

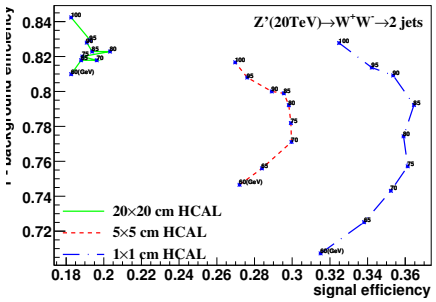
Figure 32: study of "fix central and change width" in mass soft drop at β=2, signal=tt, in 40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



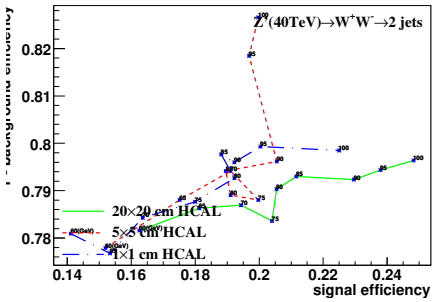
(a) Change width to 40GeV at 5TeV in cluster



(b) Change width to 40GeV at 10TeV in cluster



(c) Change width to 40GeV at 20TeV in cluster



(d) Change width to 40GeV at 40TeV in cluster

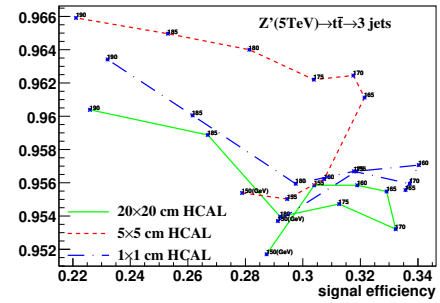
Figure 33: study of "fix width and change central" in mass soft drop at β=0, signal=ww, 5-40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.

3. **Studies of signal and background separation using Mass soft drop at $\beta = 0$ using fix width to 40GeV and change central method**

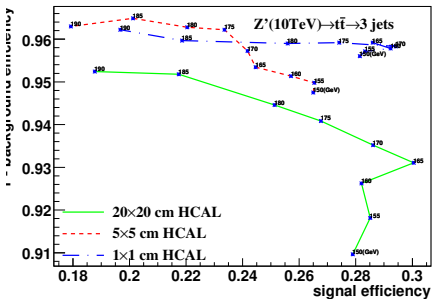
4. **Studies of signal and background separation using Mass soft drop at $\beta = 2$ using fix width to 40GeV and change central method**

5. **Studies of signal and background separation using Mass soft drop at $\beta = 0$ using fix width from 40 to 100GeV and change central method**

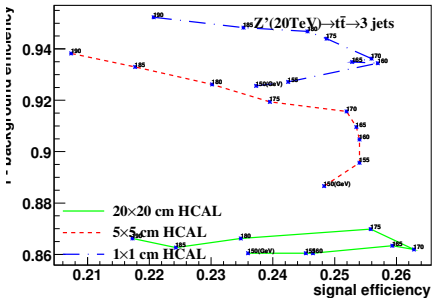
6. **Studies of signal and background separation using Mass soft drop at $\beta = 2$ using fix width from 40 to 100GeV and change central method**



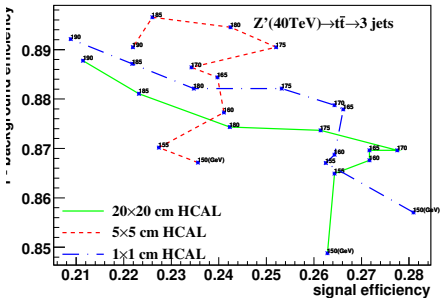
(a) Change width to 40GeV at 5TeV in cluster



(b) Change width to 40GeV at 10TeV in cluster

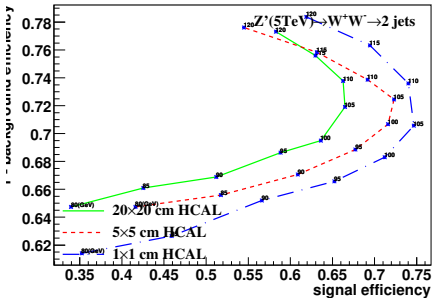


(c) Change width to 40GeV at 20TeV in cluster

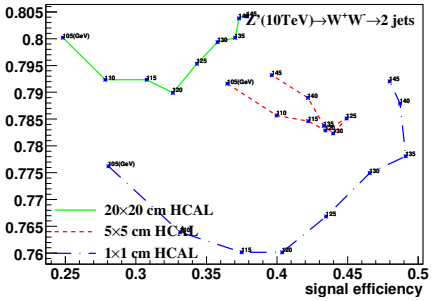


(d) Change width to 40GeV at 40TeV in cluster

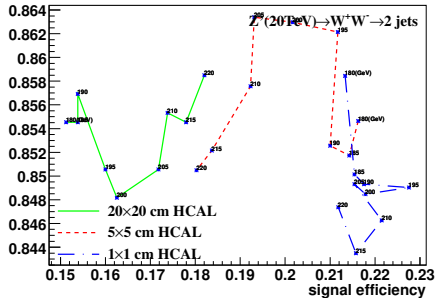
Figure 34: study of "fix width and change central" in mass soft drop at β=0, signal=tt, 5-40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



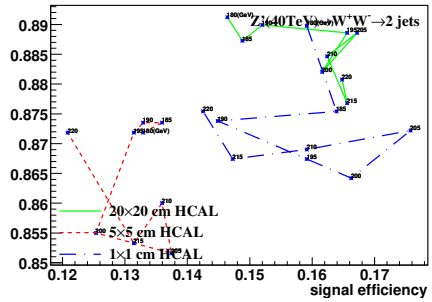
(a) Change width to 40GeV at 5TeV in cluster



(b) Change width to 40GeV at 10TeV in cluster

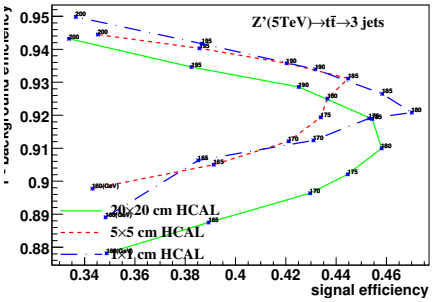


(c) Change width to 40GeV at 20TeV in cluster

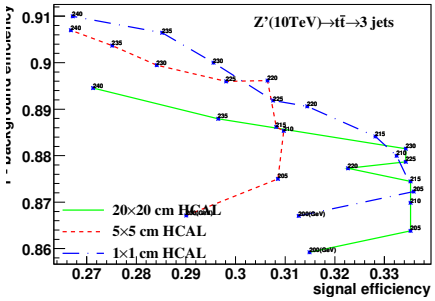


(d) Change width to 40GeV at 40TeV in cluster

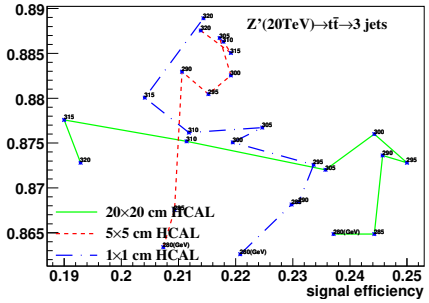
Figure 35: study of "fix width and change central" in mass soft drop at β=2, signal=ww, 5-40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



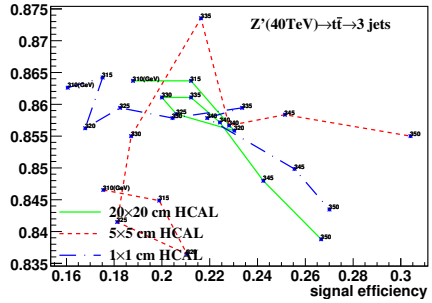
(a) Change width to 40GeV at 5TeV in cluster



(b) Change width to 40GeV at 10TeV in cluster

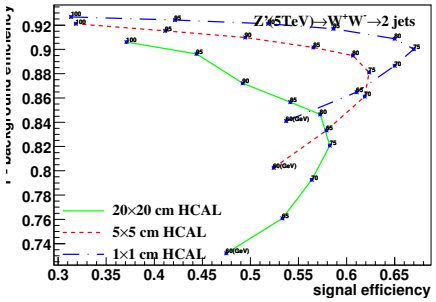


(c) Change width to 40GeV at 20TeV in cluster

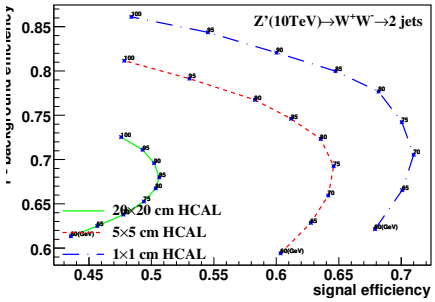


(d) Change width to 40GeV at 40TeV in cluster

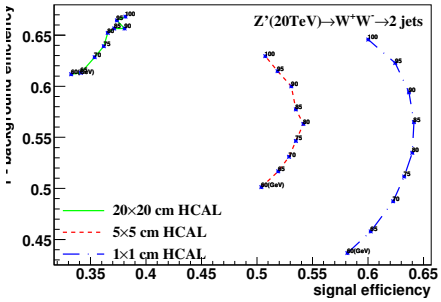
Figure 36: study of "fix width and change central" in mass soft drop at β=2, signal=tt, 5-40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



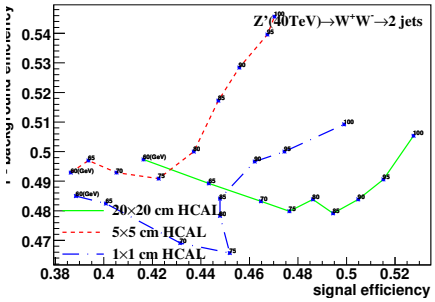
(a) Change width to 40GeV at 5TeV in cluster



(b) Change width to 60GeV at 10TeV in cluster

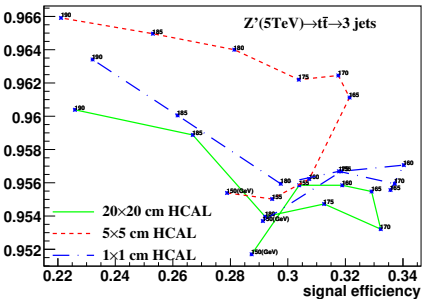


(c) Change width to 80GeV at 20TeV in cluster

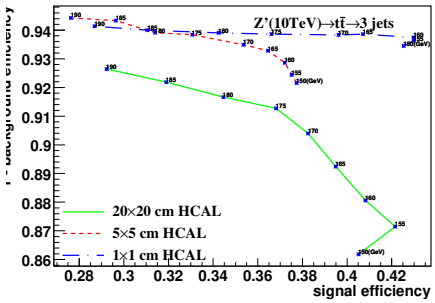


(d) Change width to 100GeV at 40TeV in cluster

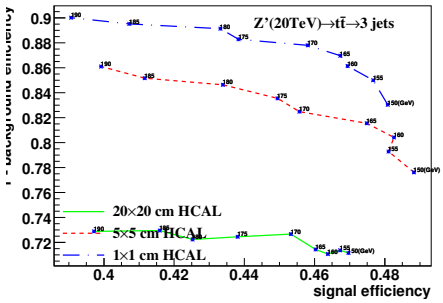
Figure 37: study of "fix width and change central" in mass soft drop at β=0, signal=ww, 5-40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



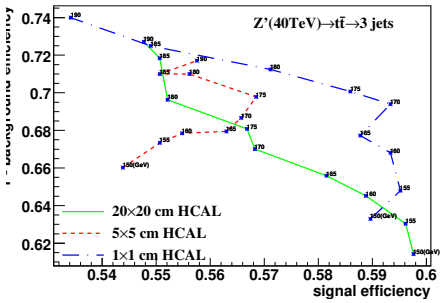
(a) Change width to 40GeV at 5TeV in cluster



(b) Change width to 60GeV at 10TeV in cluster

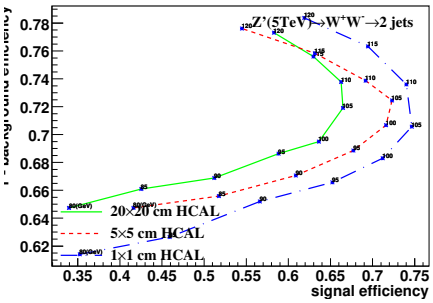


(c) Change width to 80GeV at 20TeV in cluster

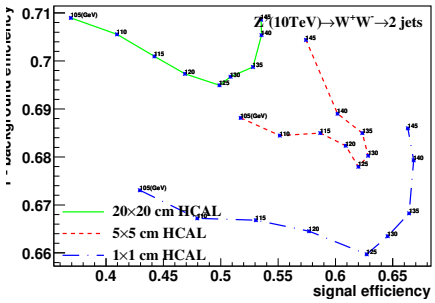


(d) Change width to 100GeV at 40TeV in cluster

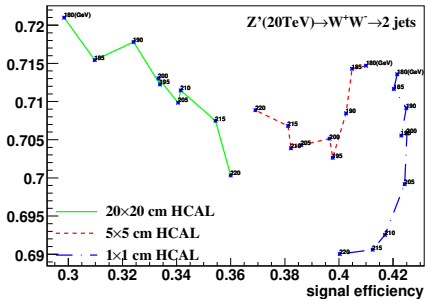
Figure 38: study of "fix width and change central" in mass soft drop at β=0, signal=tt, 5-40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



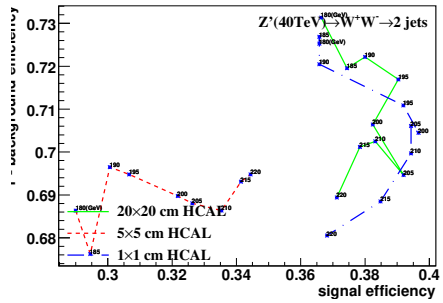
(a) Change width to 40GeV at 5TeV in cluster



(b) Change width to 60GeV at 10TeV in cluster

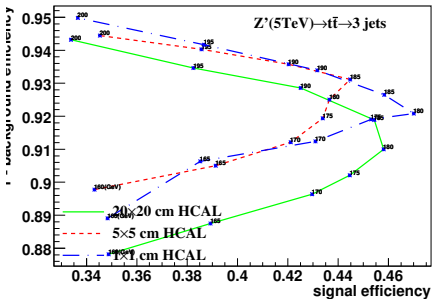


(c) Change width to 80GeV at 20TeV in cluster

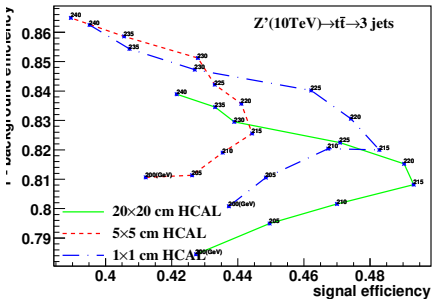


(d) Change width to 100GeV at 40TeV in cluster

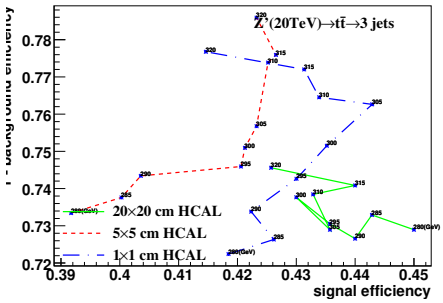
Figure 39: study of "fix width and change central" in mass soft drop at β=2, signal=ww, 5-40TeV energy of collision in different detector sizes. Cell Size in 20×20, 5×5, and 1×1(cm×cm) are shown in each picture.



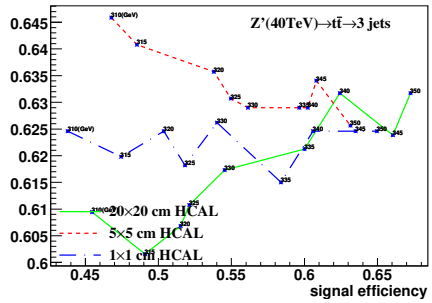
(a) Change width to 40GeV at 5TeV in cluster



(b) Change width to 60GeV at 10TeV in cluster



(c) Change width to 80GeV at 20TeV in cluster



(d) Change width to 100GeV at 40TeV in cluster

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