bb

Deltay= $\delta\ \sigma$
Dydat=error

Eff_2bin = 0.1496
Nbga_2bin = 27075

w/ Charge ID

```
proc = bb
=========================================
Ecm =500 [GeV]
SSM: M(5) = 6.91159 [TeV] M(2) = 10.4789 [TeV]

=========================================
Ecm =500 [GeV]
ALR: M(5) = 2.9472 [TeV] M(2) = 4.43143 [TeV]

=========================================
Ecm =500 [GeV]
chi: M(5) = 4.47683 [TeV] M(2) = 6.75692 [TeV]

=========================================
Ecm =500 [GeV]
psi: M(5) = 2.98332 [TeV] M(2) = 4.49344 [TeV]

=========================================
Ecm =500 [GeV]
eta: M(5) = 2.42314 [TeV] M(2) = 3.62918 [TeV]
```

① ② ③ ④ ⑤ ⑥

```
proc = bb
(polm,polp)=(-0.8, 0.3)
angle dsig range = -0.9 , 0
             zpm = 117.251
              sm = 117.774
          deltay = -0.00443466
angle bb dydat = 0.00833924

(polm,polp)=(-0.8, 0.3)
angle dsig range = 0 , 0.9
             zpm = 540.258
              sm = 543.869
          deltay = -0.00663925
angle bb dydat = 0.00304619

(polm,polp)=(0.8, -0.3)
angle dsig range = -0.9 , 0
             zpm = 52.8649
              sm = 53.6554
          deltay = -0.0147316
angle bb dydat = 0.0155568

(polm,polp)=(0.8, -0.3)
angle dsig range = 0 , 0.9
             zpm = 137.967
              sm = 138.548
          deltay = -0.00419198
angle bb dydat = 0.00740089

(polm,polp)=(-0.8, 0.3)
1bin  dsig range = -0.9 , 0.9
             zpm = 657.509
              sm = 661.642
          deltay = -0.00624683
1bin bb dydat = 0.00133875

(polm,polp)=(0.8, -0.3)
1bin  dsig range = -0.9 , 0.9
             zpm = 190.832
              sm = 192.203
          deltay = -0.00713422
1bin bb dydat = 0.00272077

=========================================
Ecm =500 [GeV]
SSM: M(5) = 6.91159 [TeV] M(2) = 6.91159 [TeV]
```

1~4: can charge ID
5,6: can't charge ID

1bin (w/o Charge ID)

```
proc = bb
=========================================
Ecm =500 [GeV]
SSM: M(5) = 6.80669 [TeV] M(2) = 11.073 [TeV] ↑

=========================================
Ecm =500 [GeV]
ALR: M(5) = 2.73017 [TeV] M(2) = 4.39679 [TeV] ↑

=========================================
Ecm =500 [GeV]
chi: M(5) = 4.41651 [TeV] M(2) = 7.14888 [TeV] ↑

=========================================
Ecm =500 [GeV]
psi: M(5) = 2.83703 [TeV] M(2) = 4.57791 [TeV] ↑

=========================================
Ecm =500 [GeV]
eta: M(5) = 2.35852 [TeV] M(2) = 3.77947 [TeV] ↑
```

Deltay= $\delta\ \sigma$
Dydat=error

cc

Eff_2bin = 0.0233
Nbga_2bin = 6456

w/ Charge ID

```
proc = cc
============================================
Ecm =500 [GeV]
SSM: M(5) = 4.88297 [TeV] M(2) = 7.39435 [TeV]

============================================
Ecm =500 [GeV]
ALR: M(5) = 4.44976 [TeV] M(2) = 6.73627 [TeV]

============================================
Ecm =500 [GeV]
chi: M(5) = 2.40387 [TeV] M(2) = 3.61023 [TeV]

============================================
Ecm =500 [GeV]
psi: M(5) = 2.26587 [TeV] M(2) = 3.38165 [TeV]

============================================
Ecm =500 [GeV]
eta: M(5) = 2.45308 [TeV] M(2) = 3.66804 [TeV]
```

①

②

③

④

⑤

⑥

```
proc = cc
(polm,polp)=(-0.8, 0.3)
angle dsig range = -0.9 , 0
             zpm = 235.11
              sm = 235.175
          deltay = -0.000277164
angle bb dydat = 0.014073

(polm,polp)=(-0.8, 0.3)
angle dsig range = 0 , 0.9
             zpm = 817.571
              sm = 824.705
          deltay = -0.00865024
angle bb dydat = 0.0062734

(polm,polp)=(0.8, -0.3)
angle dsig range = -0.9 , 0
             zpm = 105.07
              sm = 104.378
          deltay = 0.00663593
angle bb dydat = 0.0261413

(polm,polp)=(0.8, -0.3)
angle dsig range = 0 , 0.9
             zpm = 454.782
              sm = 456.984
          deltay = -0.00481995
angle bb dydat = 0.00899676

(polm,polp)=(-0.8, 0.3)
1bin  dsig range = -0.9 , 0.9
             zpm = 1052.68
              sm = 1059.88
          deltay = -0.00679235
1bin cc dydat = 0.00123667
(polm,polp)=(0.8, -0.3)
1bin  dsig range = -0.9 , 0.9
             zpm = 559.852
              sm = 561.362
          deltay = -0.00268988
1bin cc dydat = 0.00171355
============================================
Ecm =500 [GeV]
SSM: M(5) = 4.88297 [TeV] M(2) = 4.88297 [TeV]
```

1~4: can charge ID
5,6: can't charge ID

1bin (w/o Charge ID)

```
proc = cc
============================================
Ecm =500 [GeV]
SSM: M(5) = 5.25193 [TeV] M(2) = 8.53532 [TeV]

============================================
Ecm =500 [GeV]
ALR: M(5) = 4.62859 [TeV] M(2) = 7.5196 [TeV]

============================================
Ecm =500 [GeV]
chi: M(5) = 2.5606 [TeV] M(2) = 4.12598 [TeV]

============================================
Ecm =500 [GeV]
psi: M(5) = 2.37576 [TeV] M(2) = 3.80475 [TeV]

============================================
Ecm =500 [GeV]
eta: M(5) = 2.55115 [TeV] M(2) = 4.09178 [TeV]
```

Mass limit

With Charge ID

Use bin

2 polarization pattern ->(-0.8,+0.3), (+0.8,-0.3)

SSM for bb	②+⑤	②+⑤+⑥	**Without Charge ID 2 pol pattern**	**Wothout Charge ID (-0.8,+0.3) only**
5sigma(TeV)	6.8	7.1	6.8	6.7
2sigma(TeV)	11.1	11.2	11.1	11.5

SSM for cc	②+⑤	②+⑤+⑥	**Without Charge ID 2 pol pattern**	**Wothout Charge ID (-0.8,+0.3)only**
5sigma(TeV)	5.2	5.1	5.3	5.4
2sigma(TeV)	9.0	8.0	8.5	9.3

Next, I will calculate models other than SSM.