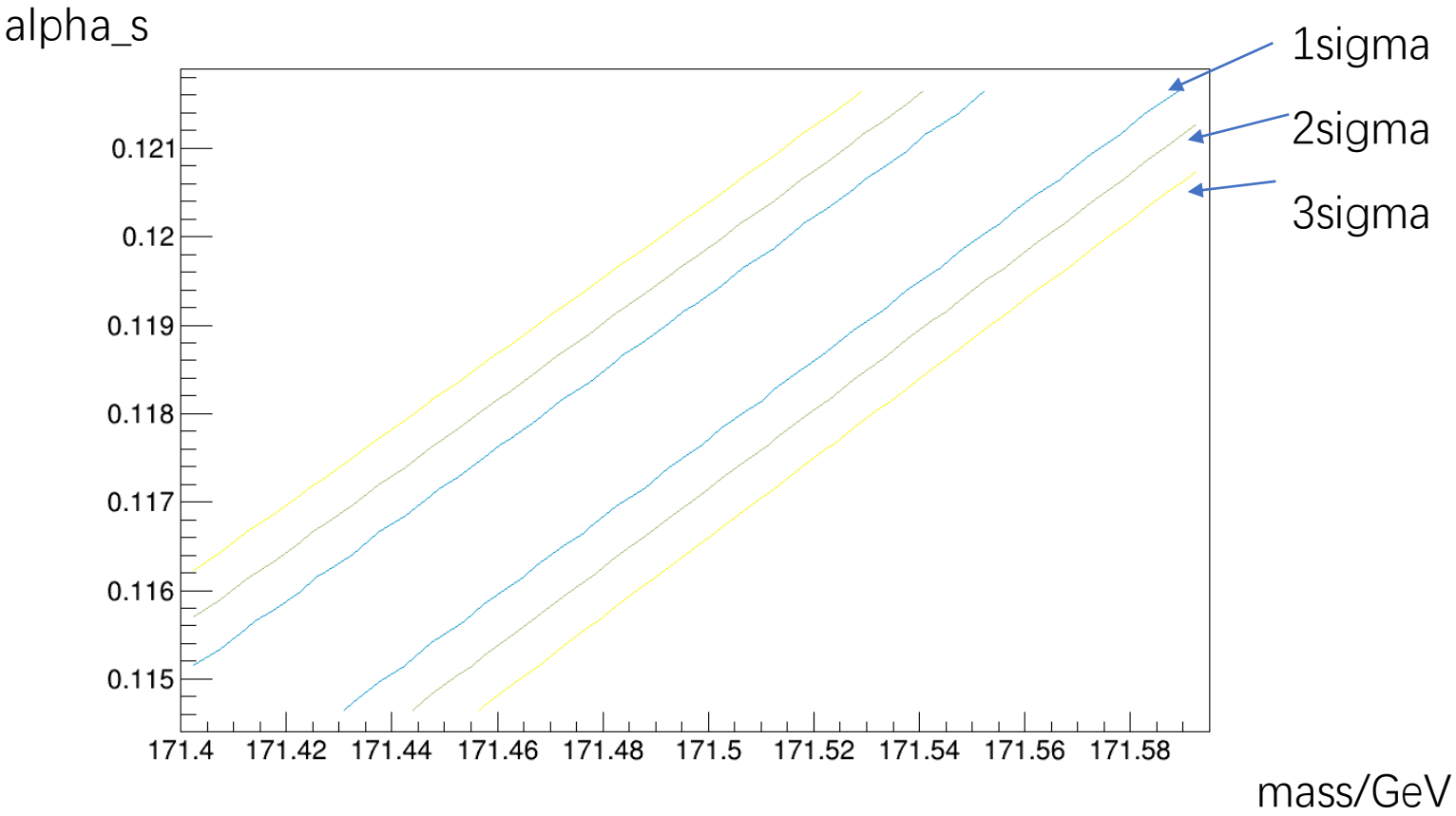
Update

Zhan

2022.10.31

Top mass

- The referee wanted us to provide the figure of 2d scan of mass vs. alphas.



- We expect to get the figure like this:

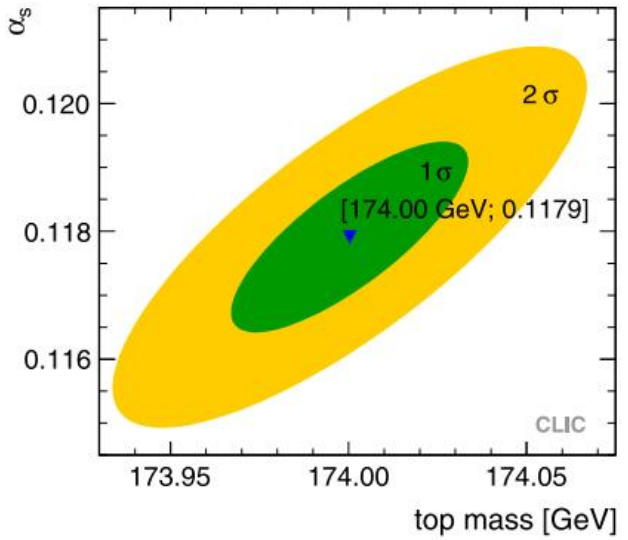


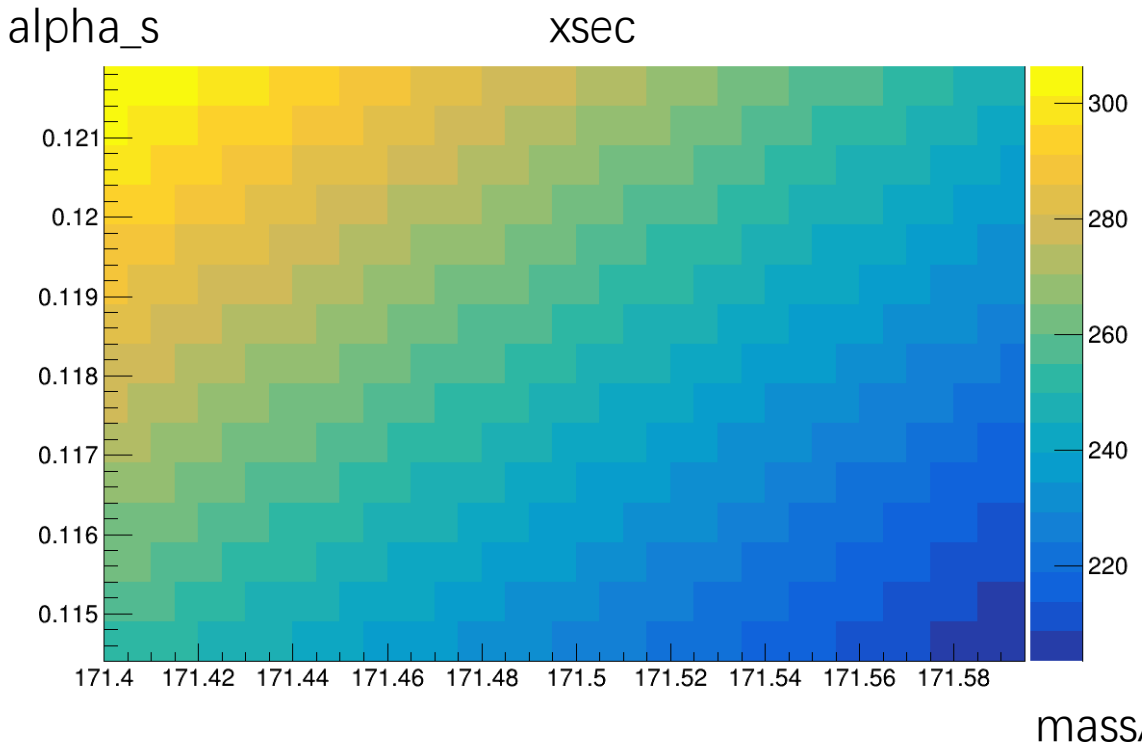
Fig. 6 Expected statistical errors from a simultaneous fit of the top mass and the strong coupling constant, showing the correlation of the two variables and the achieved precision

Eur. Phys. J. C (2013) 73:2530

Top mass

- But we cannot get a closed curve.

The reason is:

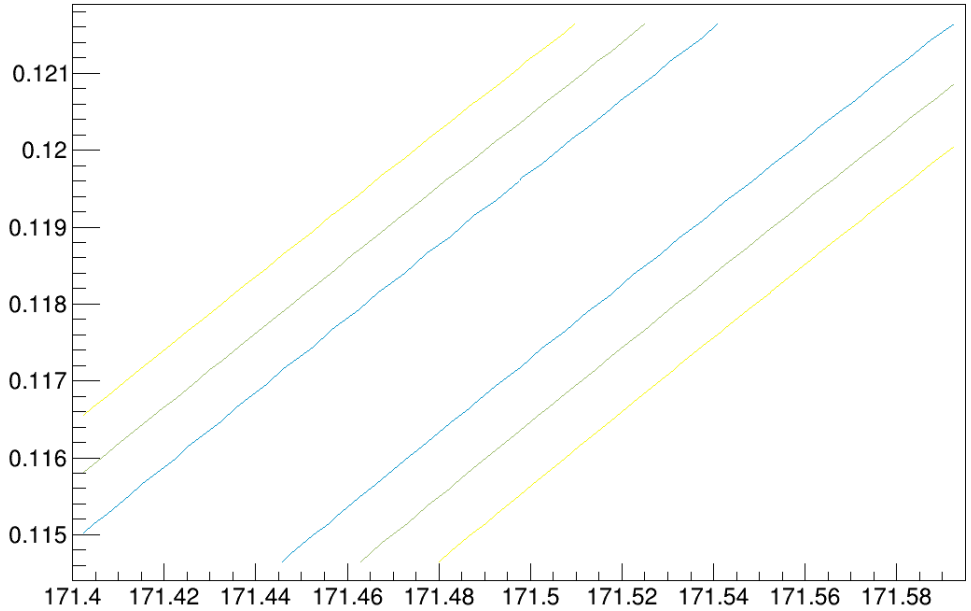


The fit method we use is number counting method.

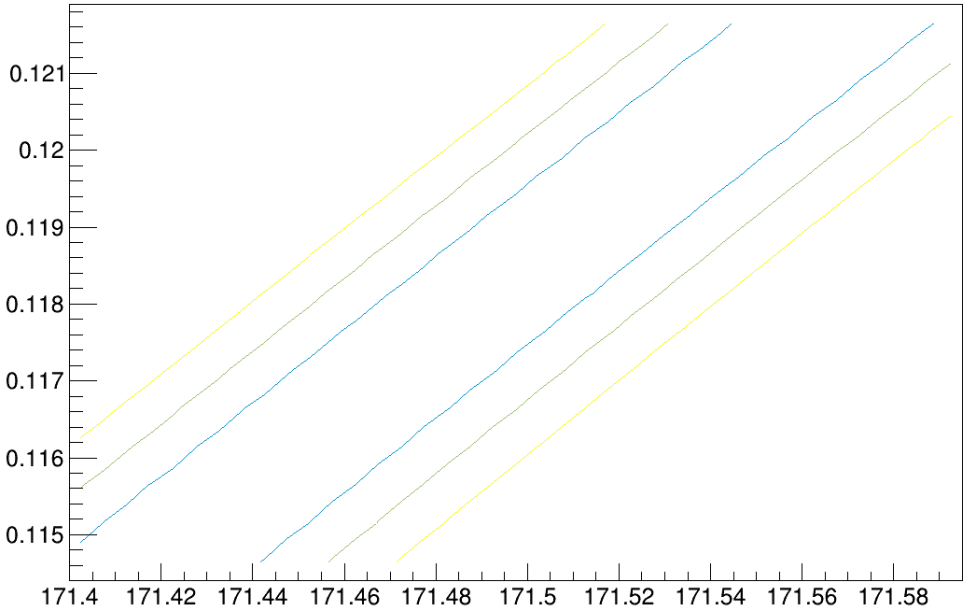
Since the xsec of the lower-left and the upper-right changes mildly, we cannot get a closed curve.

Xiaohu has sent email to them, for we would like to know what knid of method they use to get the closed curve.

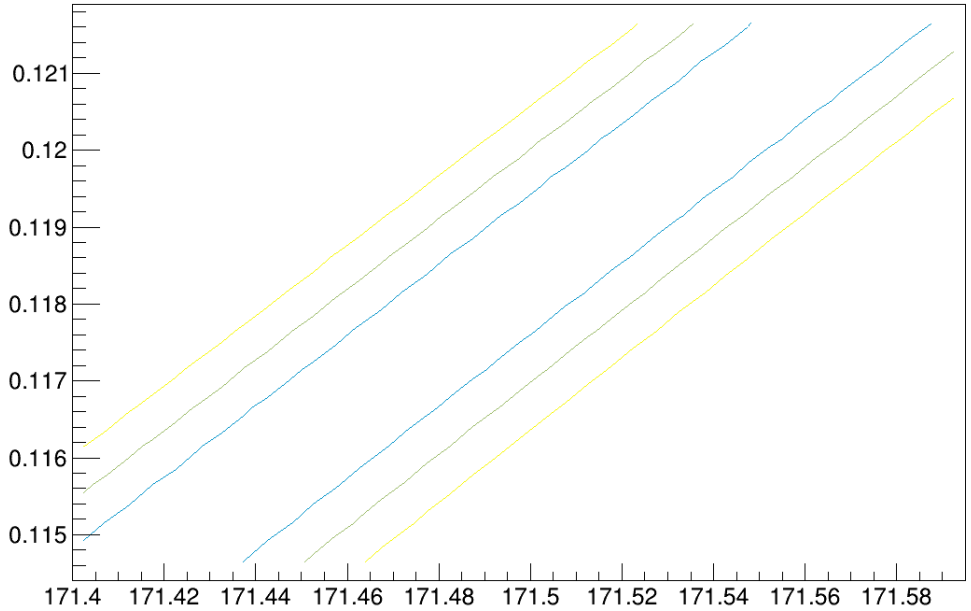
342.00 GeV 100fb-1



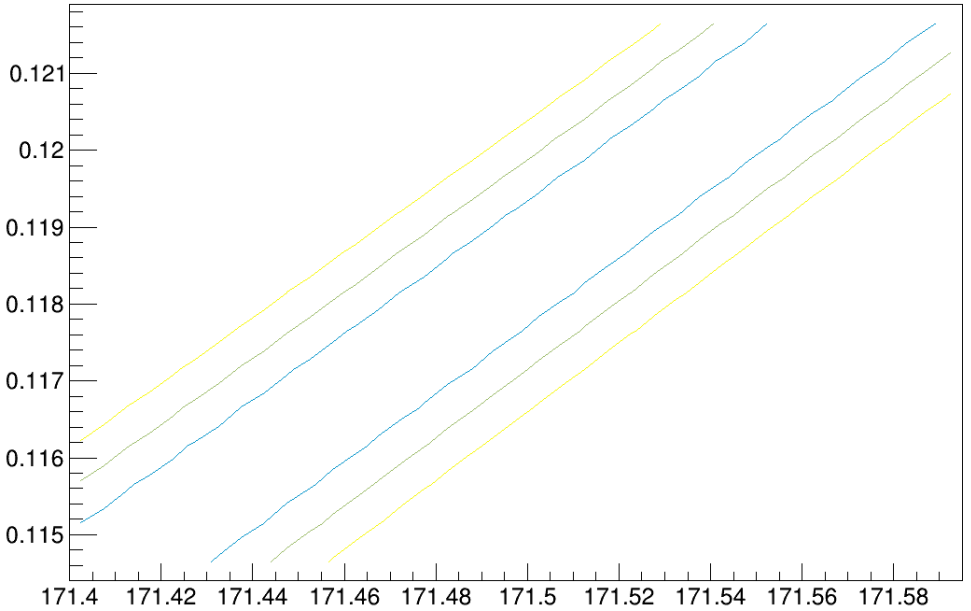
342.25 GeV 100fb-1



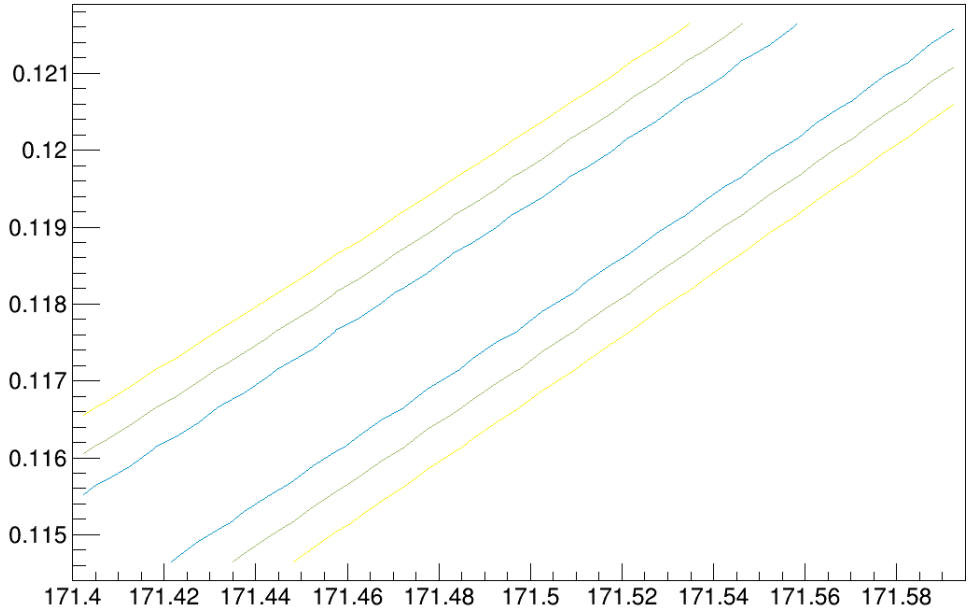
342.50 GeV 100fb-1



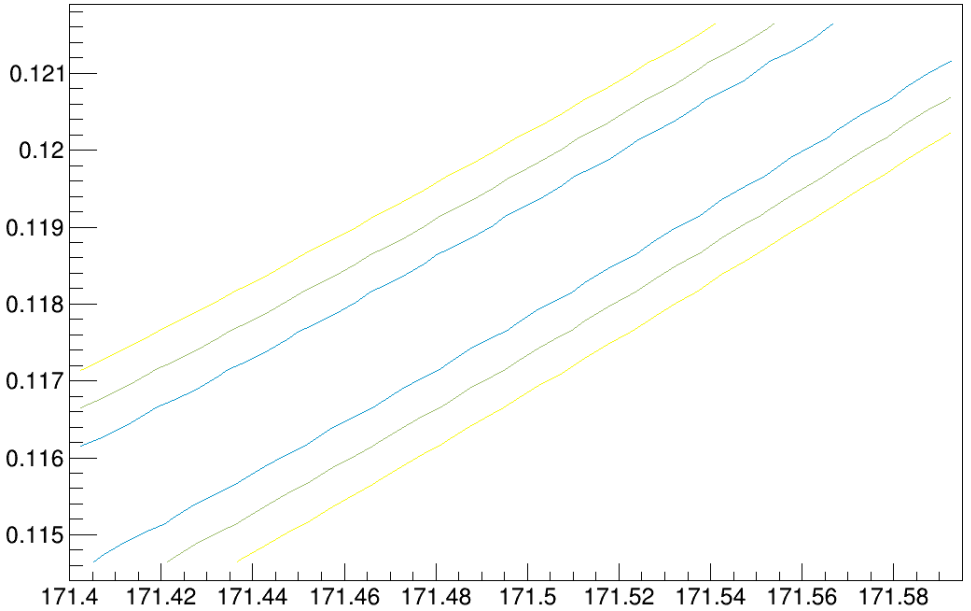
342.75 GeV 100fb-1



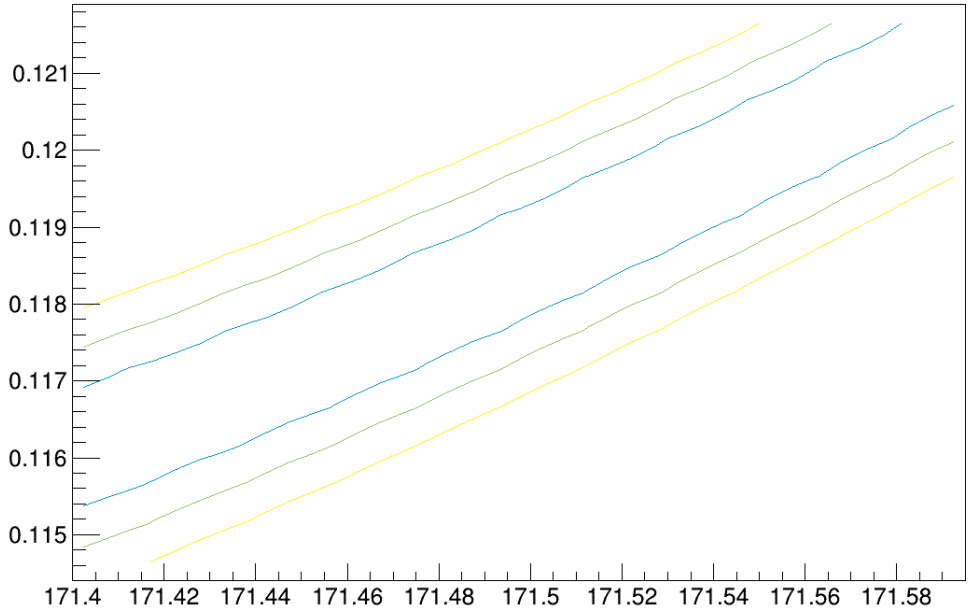
343.00 GeV 100fb-1



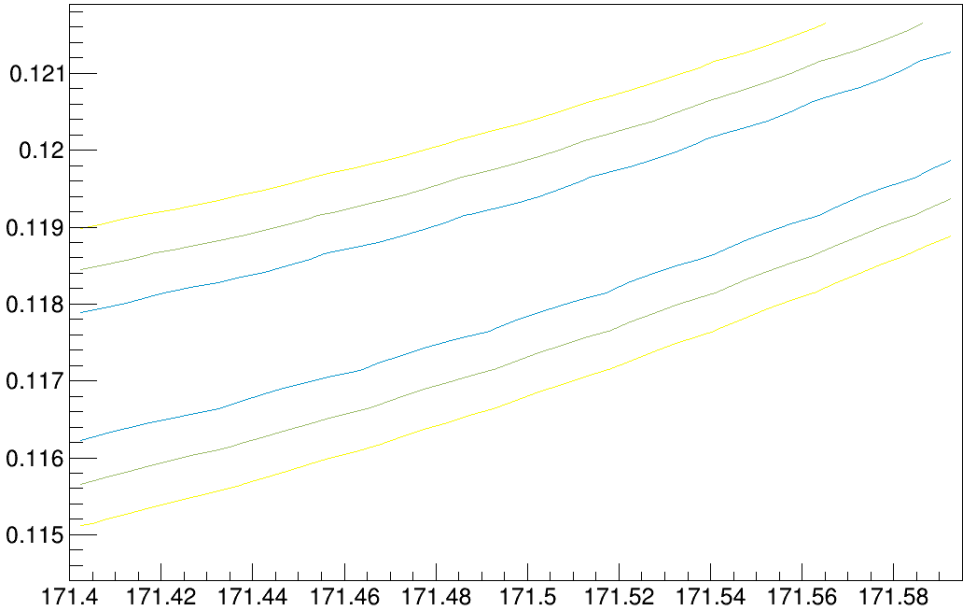
343.25 GeV 100fb-1



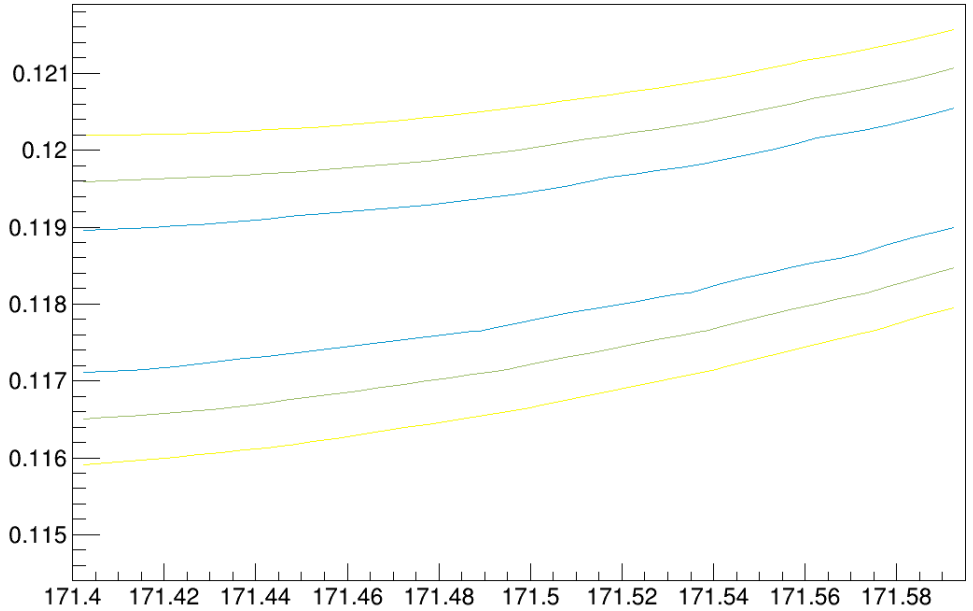
343.50 GeV 100fb-1



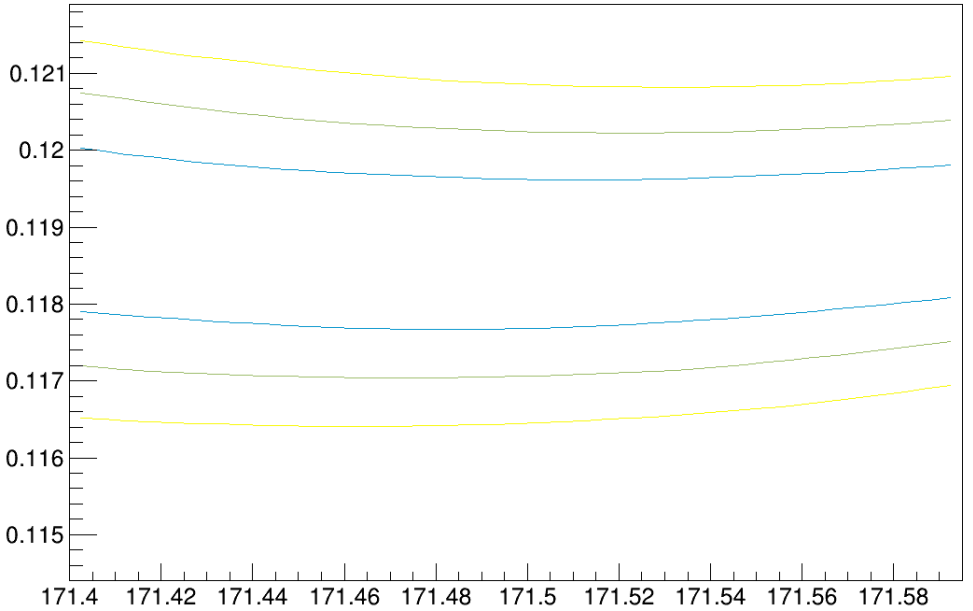
343.75 GeV 100fb-1



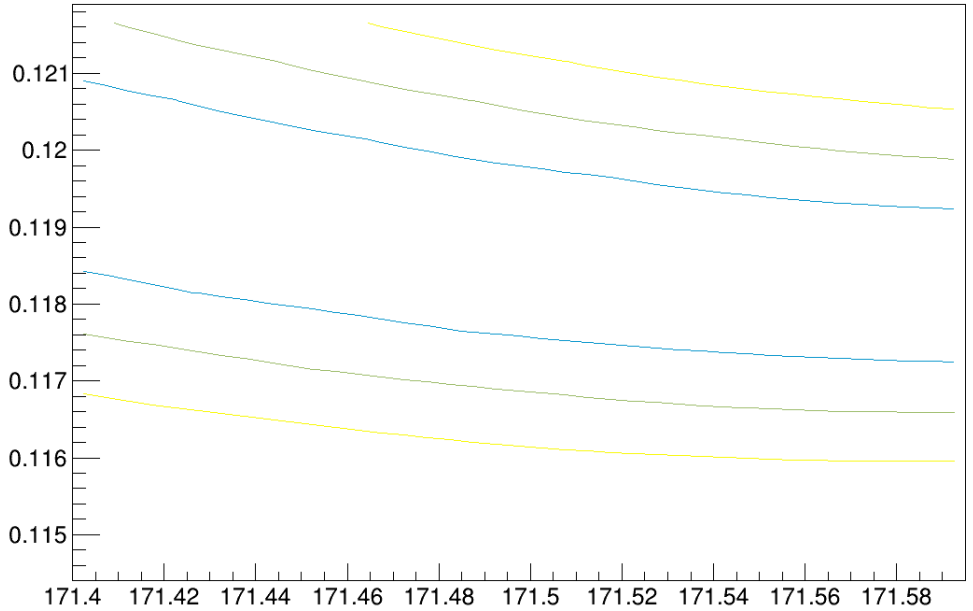
344.00 GeV 100fb-1



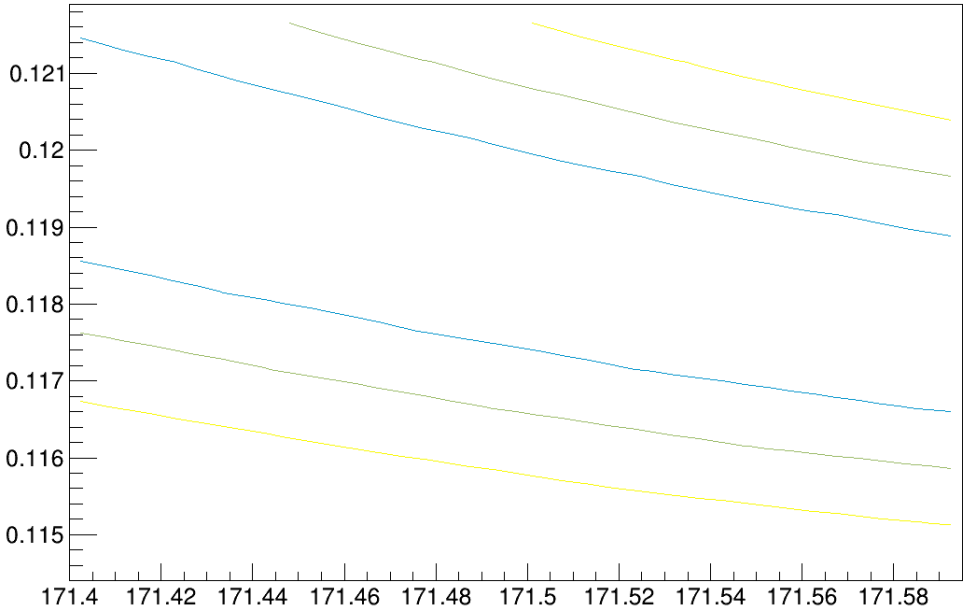
344.25 GeV 100fb-1



344.50 GeV 100fb-1



344.75 GeV 100fb-1

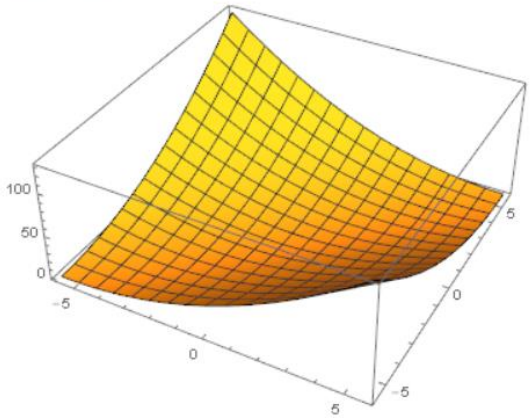


```
z = (y - x)^2
```

```
(-x + y)^2
```

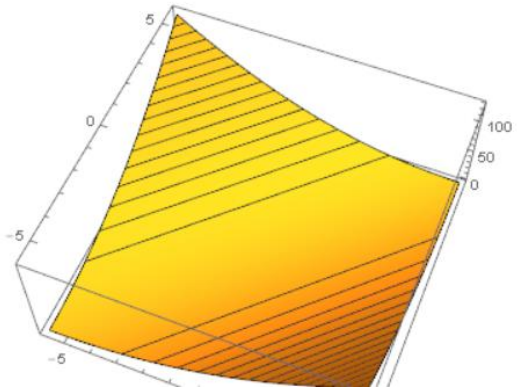
```
Plot3D[z, {x, -5.70711, 5.70711}, {y, -5.70711, 5.70711}]
```

绘制三维图形




```
Plot3D[z, {x, -5.70711, 5.70711}, {y, -5.70711, 5.70711}, Mesh → Automatic, MeshFunctions → {#3 &}]
```

绘制三维图形 网格 自动 网格函数

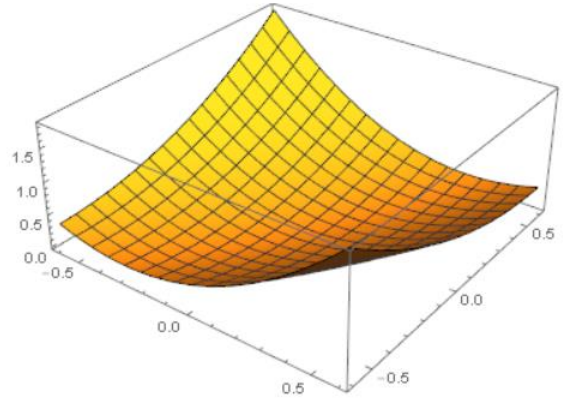



```
z = x^2 + (y - x)^2
```

```
x^2 + (-x + y)^2
```

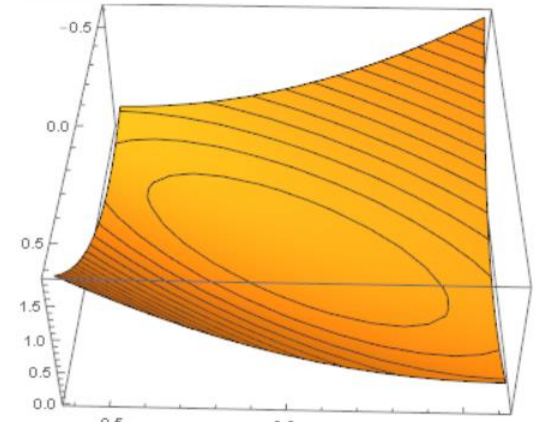
```
Plot3D[z, {x, -0.607737, 0.607737}, {y, -0.607737, 0.607737}]
```

绘制三维图形

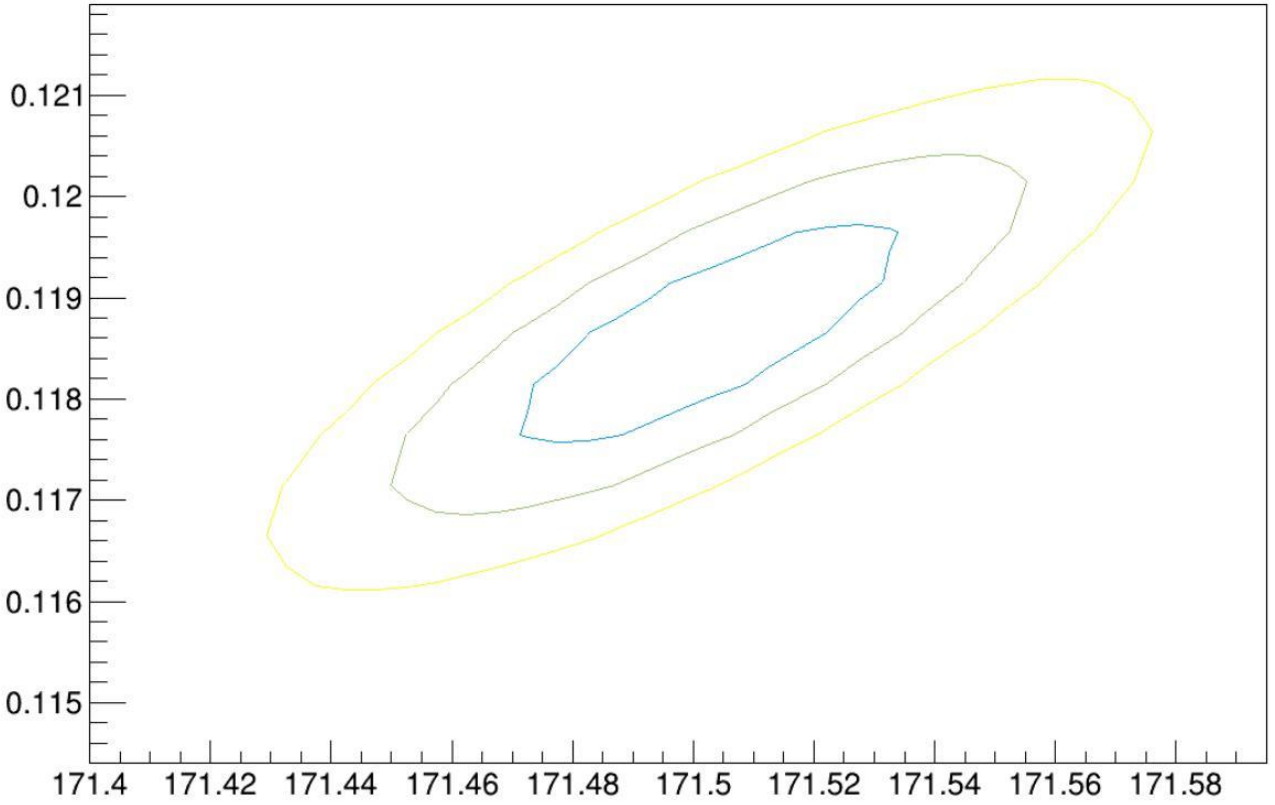



```
Plot3D[z, {x, -0.607737, 0.607737}, {y, -0.607737, 0.607737}, Mesh → Automatic, MeshFunctions → {#3 &}]
```

绘制三维图形 网格 自动 网格函数



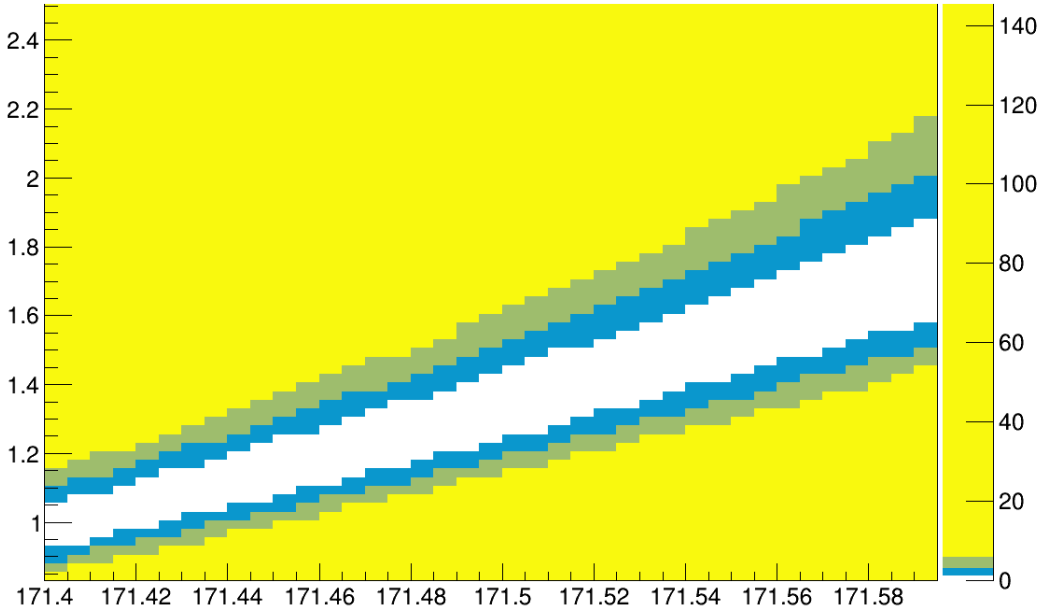
Unfinished



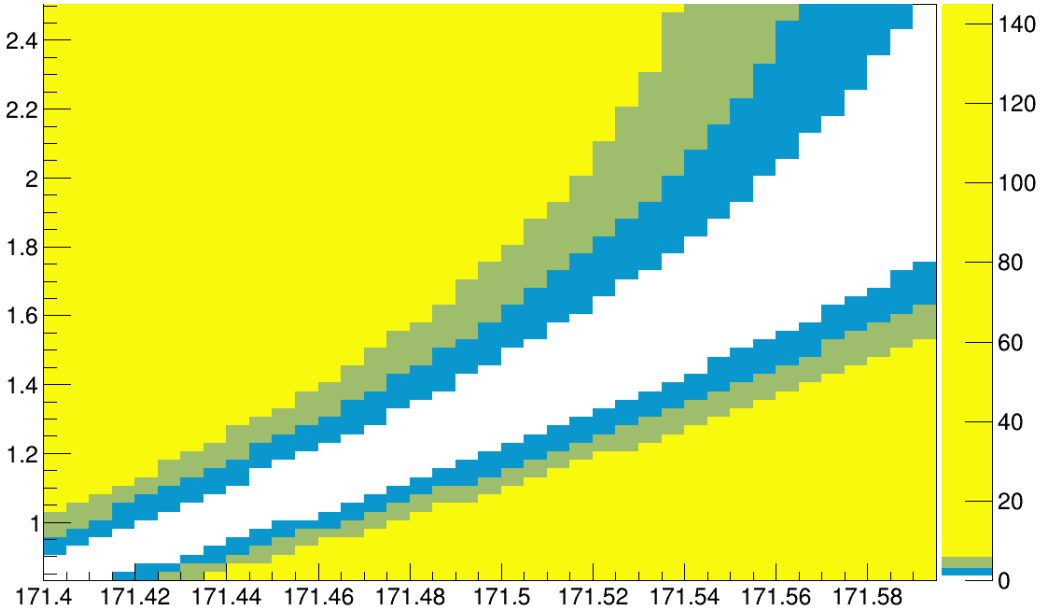
342.75, 344.25, each sqrt(s) is given 50fb-1
(total lum unchanged)

Still need to be done:
1. Find the best point selection scheme
2. Get the error

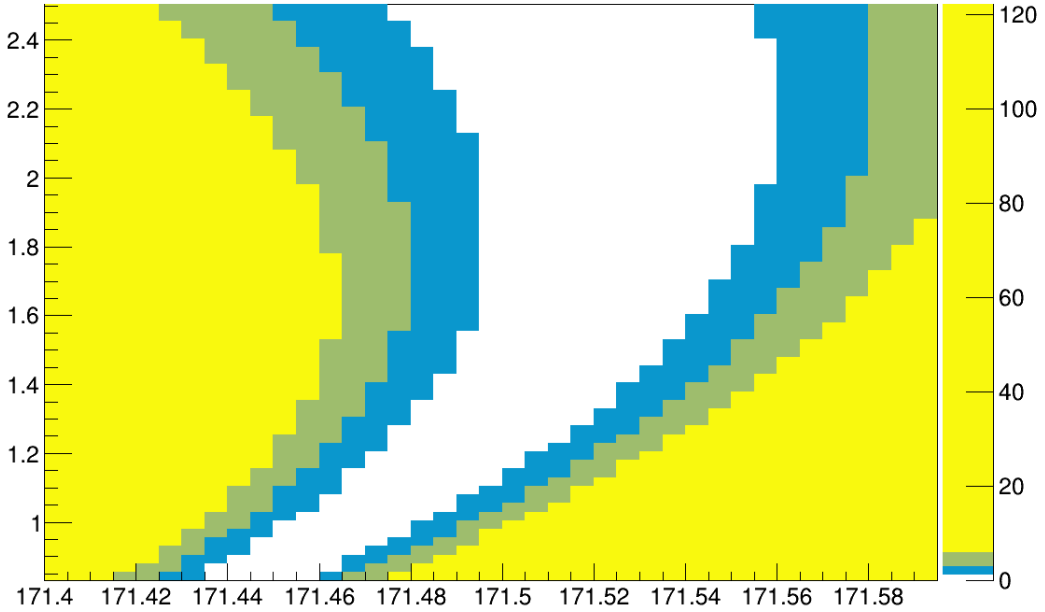
342.00 GeV 100fb-1



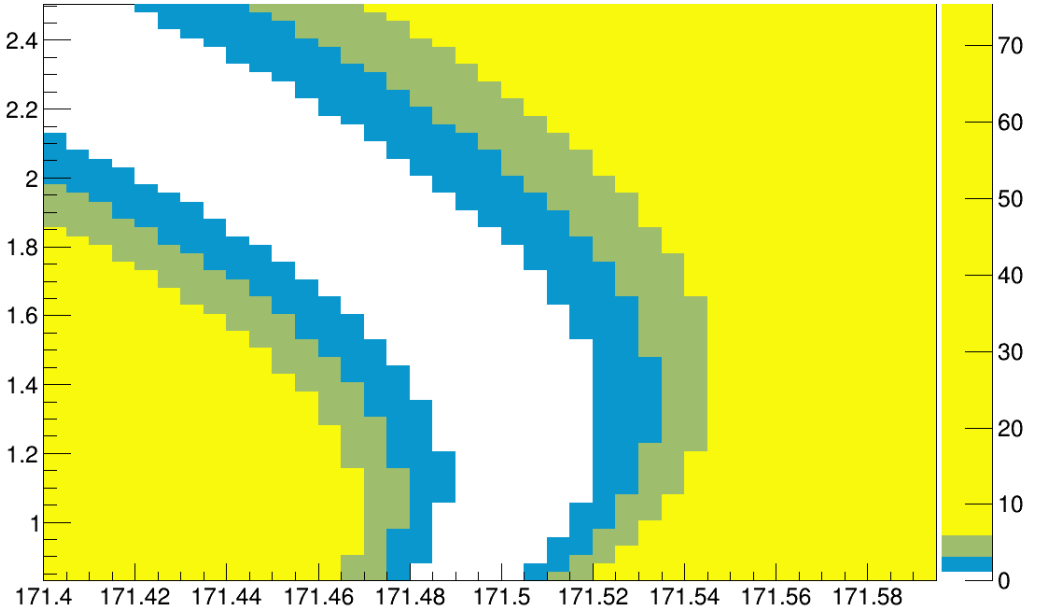
342.25 GeV 100fb-1



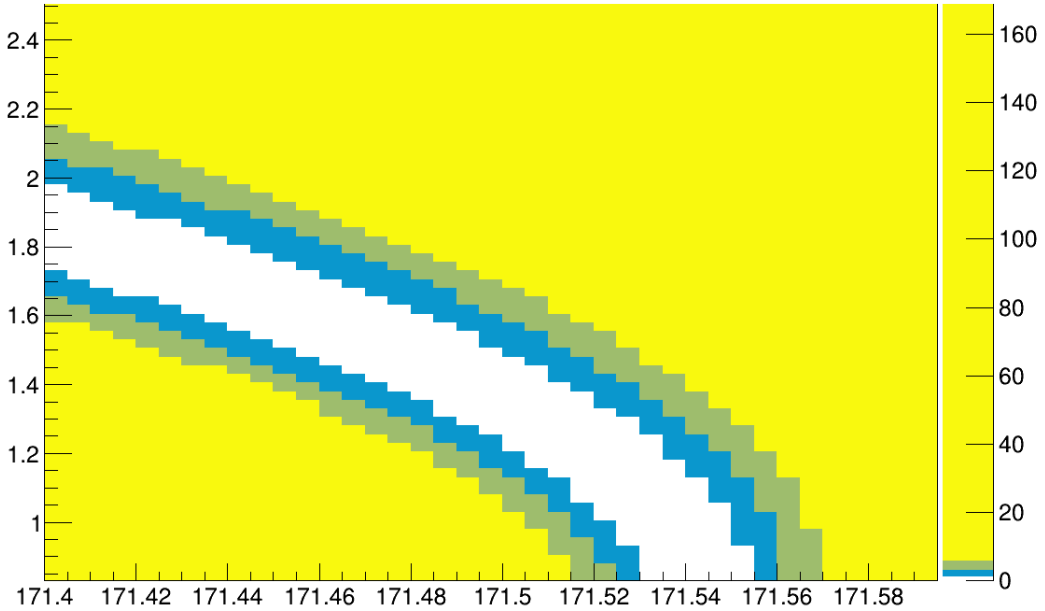
342.50 GeV 100fb-1



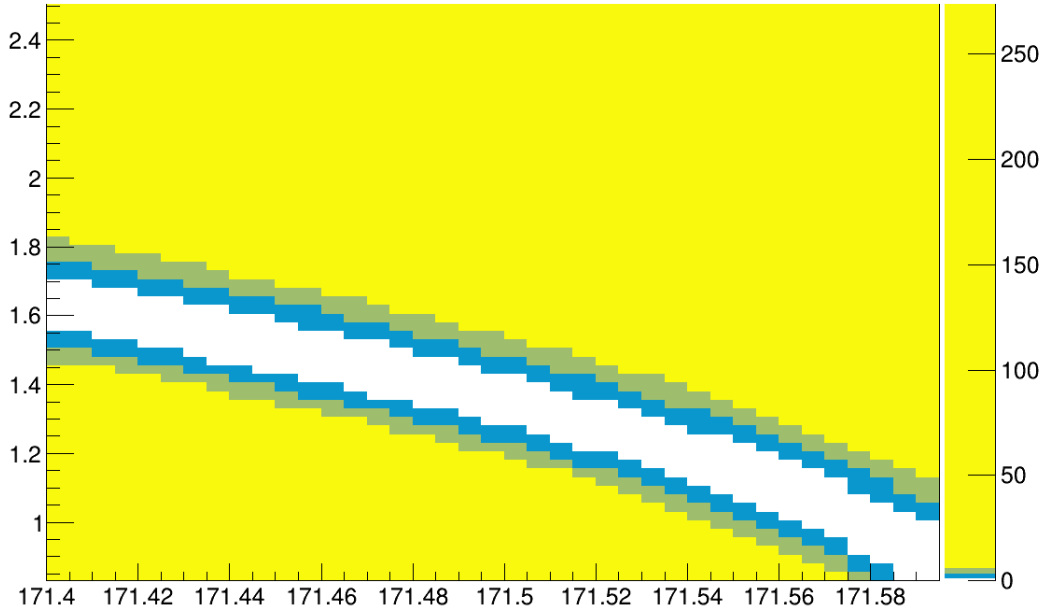
342.75 GeV 100fb-1



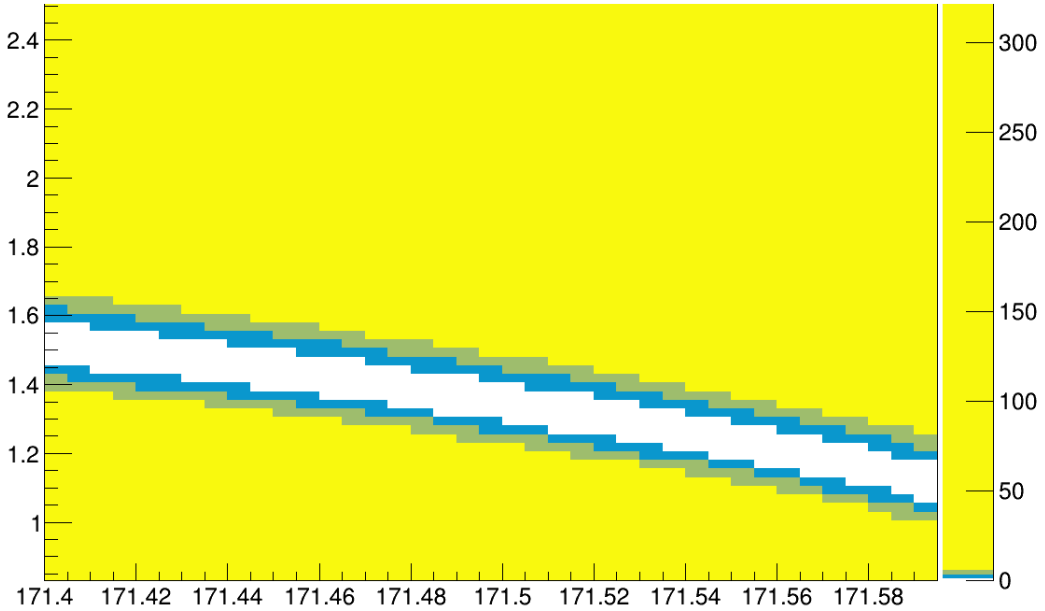
343.00 GeV 100fb-1



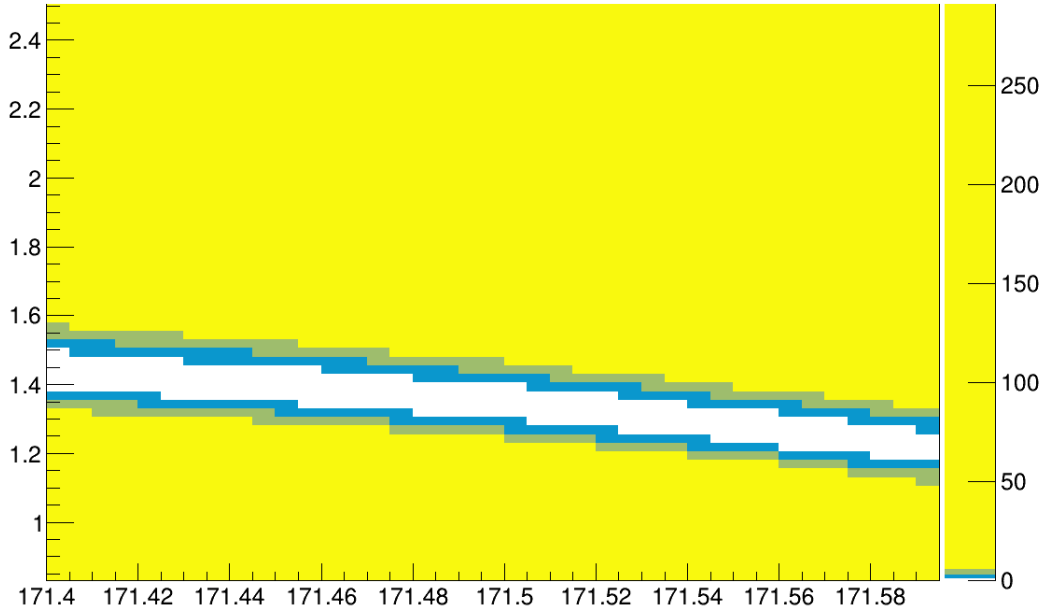
343.25 GeV 100fb-1



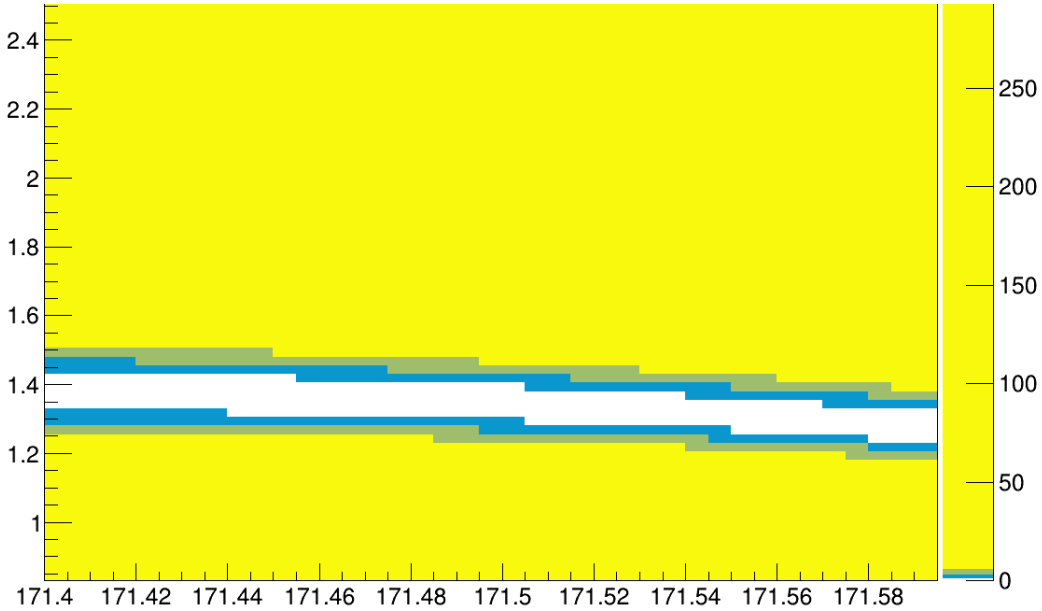
343.50 GeV 100fb-1



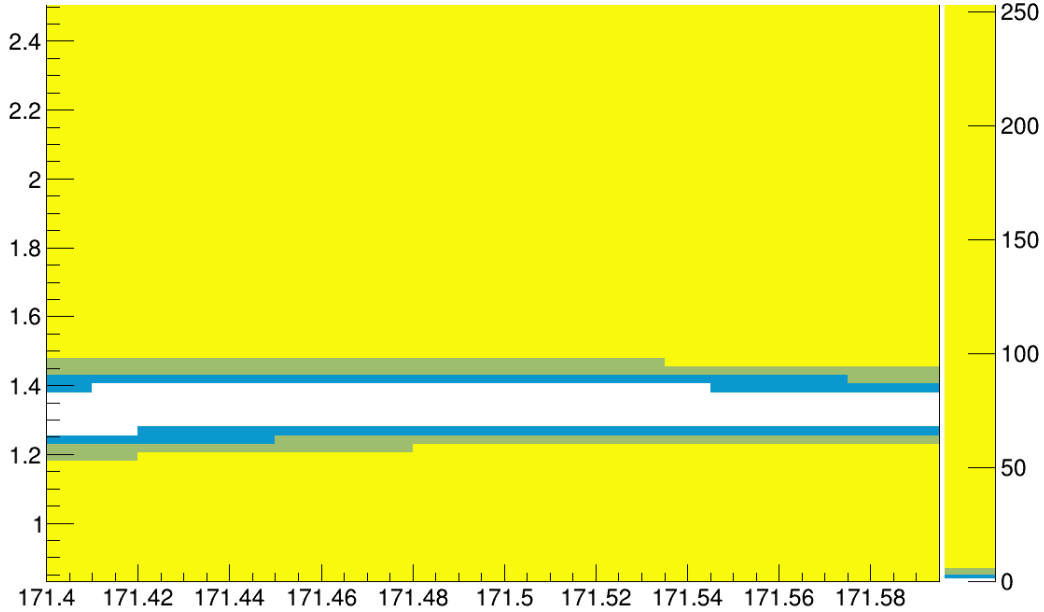
343.75 GeV 100fb-1



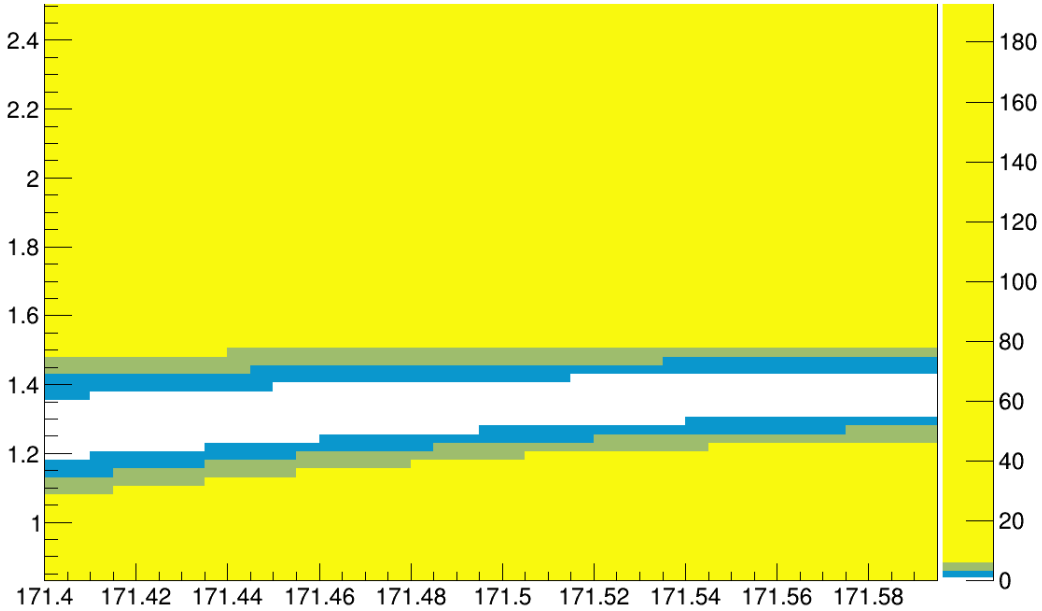
344.00 GeV 100fb-1



344.25 GeV 100fb-1



344.50 GeV 100fb-1



344.75 GeV 100fb-1