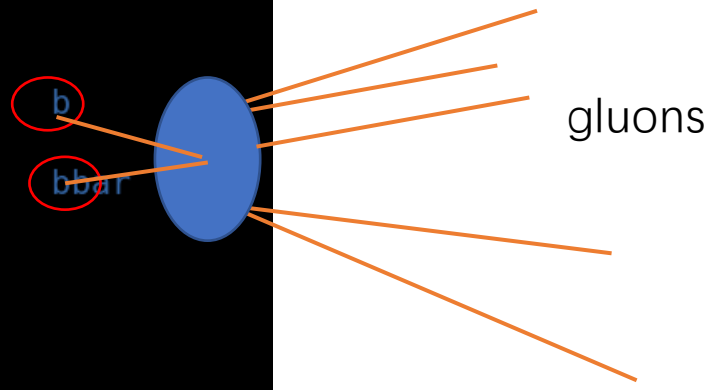


Redo the kinematic fit: parton & matching

- vvH inclusive sample
- Parton:

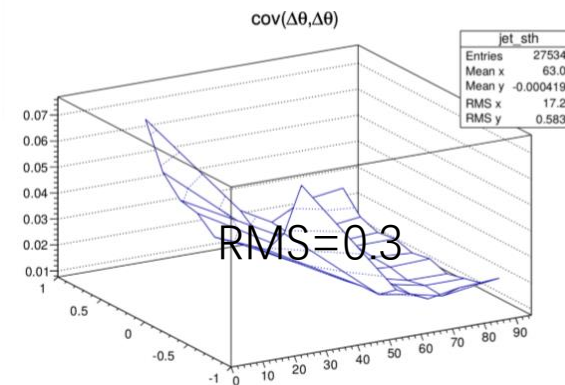
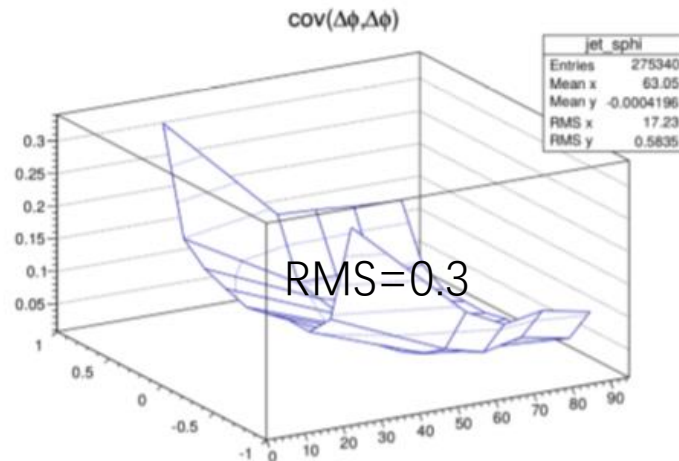
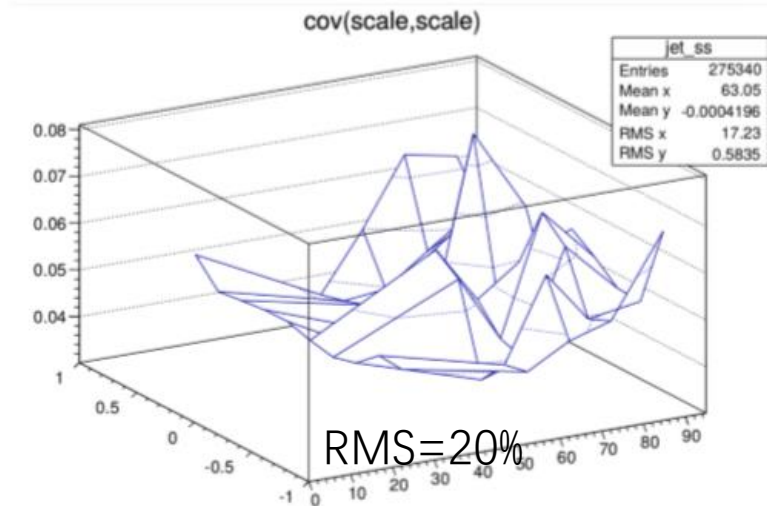
```
//there are two kinds of feynman diagrams
// (1)
// H < / -- b \ > shower system (pdg = 94) < /-- b
//      \ -- bbar /      \-- bbar
//
// (2)
// H < / -- b
//      \ -- bbar
// find out if there is a shower systems
```



- Match:
 - Two possible combination, choose by minimizing
 - $\sum_{i=1,2} (\mathbf{p}_{i,part} - \mathbf{p}_{i,reco})^2$

Redo the kinematic fit: parton & matching

- Performance is too bad
 - (should be) Without any cleaning



- Original observable with a prime
- Obtain kinematic fit correction without a prime, by minimizing

$$\chi^2 = \sum_{i=1,2} \left(\frac{\theta_i - \theta'_i}{\sigma_{\theta,i}} \right)^2 + \left(\frac{\phi_i - \phi'_i}{\sigma_{\phi,i}} \right)^2 + \left(\frac{E_i - E'_i}{\sigma_{E,i}} \right)^2$$

- Alternative: linear scaling
- Both result in 3.0% for WW fusion, H->bb