

Minutes of CEPC HZZ Meeting

Online, 2020-07-14

Meeting indico link: <https://indico.ihep.ac.cn/event/11459>

Analysis Update

1. The 2d-cut is applied in the BDT analysis and the event flow table is made for all of 6 channels.
 - From the comparison of the term, $S/\sqrt{S+B}$, with the previous result, slight improvement on the precision is seen. The amount is similar to that of the cut-based analysis, but will need to compare the value with the fitting.
 - The number of events, after the BDT score cut is applied, vary a lot for certain channels.
2. Contribution of the other HZZ backgrounds is evaluated.
 - sys. uncertainty evaluated by doubling the number of the other HZZ events in the background is less than 0.1% in the final precision for each channel. (Note that the numbers are obtained from the $S/\sqrt{S+B}$ method, but the order of impact will be the same)

Actions

1. Try to see the impact on the final number(s) by setting the other Higgs decay's contribution as floating, especially the one which has large number of events in background. ($H \rightarrow b\bar{b}$, $H \rightarrow WW$, $H \rightarrow \tau\tau$, etc.)
2. For the BDT analysis, obtain the fitting results
3. Confirm the logic about the HZZ signal definition

Other discussion

- We will have a meeting on next Tuesday (July 21th), 10:30 am (Beijing time).