

Introduction

Zhijun Liang

IHEP,CAS

CEPC CDR time scale

Timeline Proposal from Joao:

- Preliminary proposal for discussion:
 - **July 2:** physics updates finished (one month from now!)
 - July 15: text for physics and performance available
 - **July 30:** final internal editing finished
 - Aug 30: finish internal review
 - Sept 1-30: international review
 - **Oct 30:** release to public
- Here is the link to current draft of CEPC CDR in Git :
 - <http://cepcgit.ihep.ac.cn/cepcdoc/CDR>

CEPC physics workshop

The 4th CEPC Physics and Software Workshop

from Wednesday, 27 June 2018 at **08:00** to Friday, 29 June 2018 at **18:00** (Asia/Shanghai)
at **IHEP (B326)**

Description This is a mini-workshop mainly focus on the CEPC physics analysis and software. All Higgs analyzes will be covered and discussed, including how to perform the professional physics analysis, the strategy to suppress the systematic uncertainties. Anyone interested CEPC physics are welcome to join, and in particular the students are encouraged to participate this workshop.

No registration fee needed.

Place: B326, main building of IHEP

Vidyo Info

Room Name	CEPCPS2018
Link	http://vidyo.ihep.ac.cn/flex.html?roomdirect.html&key=we8ulLPIdSgFRW4GymeT2usOE
Extension	002018062601

[Go to day](#) ▾

Wednesday, 27 June 2018

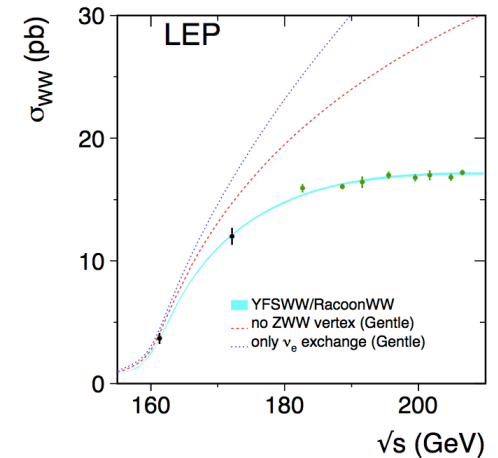
- 08:40 - 10:00 **General introduction**
Convener: Prof. Yaquan FANG Yaquan (高能所)
- 08:40 **Welcome 10'**
Speaker: Prof. Xinchou Lou (IHEP)
- 08:50 **1. Higgs physics at circular electron-positron colliders 40'**
Speaker: Jianming Qian (University of Michigan)

– Here is the link to CEPC mini workshop (June 27-28) :

- <https://indico.ihep.ac.cn/event/7875/other-view?view=standard>

WW threshold scan proposal

- Accelerator team is asking for data taking proposal for WW threshold scan runs for CDR writing.
- Draft proposal Based on Peixun and Gang study :
 - 1 year Data taking in WW threshold (2.5 ab^{-1})
 - Four energy scan points:
 - 157.5, 161.5, 162.5(W mass, W width measurements)
 - 172.0 GeV (α_{QCD} measurement, $\text{Br}(W \rightarrow \text{had})$, CKM $|V_{cs}|$)
 - 16M WW events in total (40k WW events in LEP2)
 - 400 times larger than LEP2 comparing WW runs



E_{cm} (GeV)	Lumiosity(ab^{-1})	Cross section (pb)	Number of WW pairs (M)
157.5	0.5	1.6	0.8
161.5	0.2	5.1	1.0
162.5	1.3	6.6	8.6
172.0	0.5	12.4	6.2

Expected precision in WW scan

- Statistics is enough for Branching ratio measurement $\text{Br}(W \rightarrow \text{had})$ and $\alpha_{\text{QCD}}(mW)$ measurements.
- Statistics uncertainty is one of the limiting factor for W mass and W width measurement in CEPC one year running plan (2.5 fb^{-1})

Energy (GeV)	Systematics	Statistics uncertainty	limiting factor
W mass	1MeV Beam energy	1.3 MeV	Statistics
W width	1 MeV	3.6 MeV	Statistics
Br (W→had) & $\alpha_{\text{QCD}}(mW)$	10^{-4}	10^{-4}	/

Estimation based of $\alpha_{\text{QCD}}(mW)$ based on
Physics Letters B 763 (2016) 465–471