

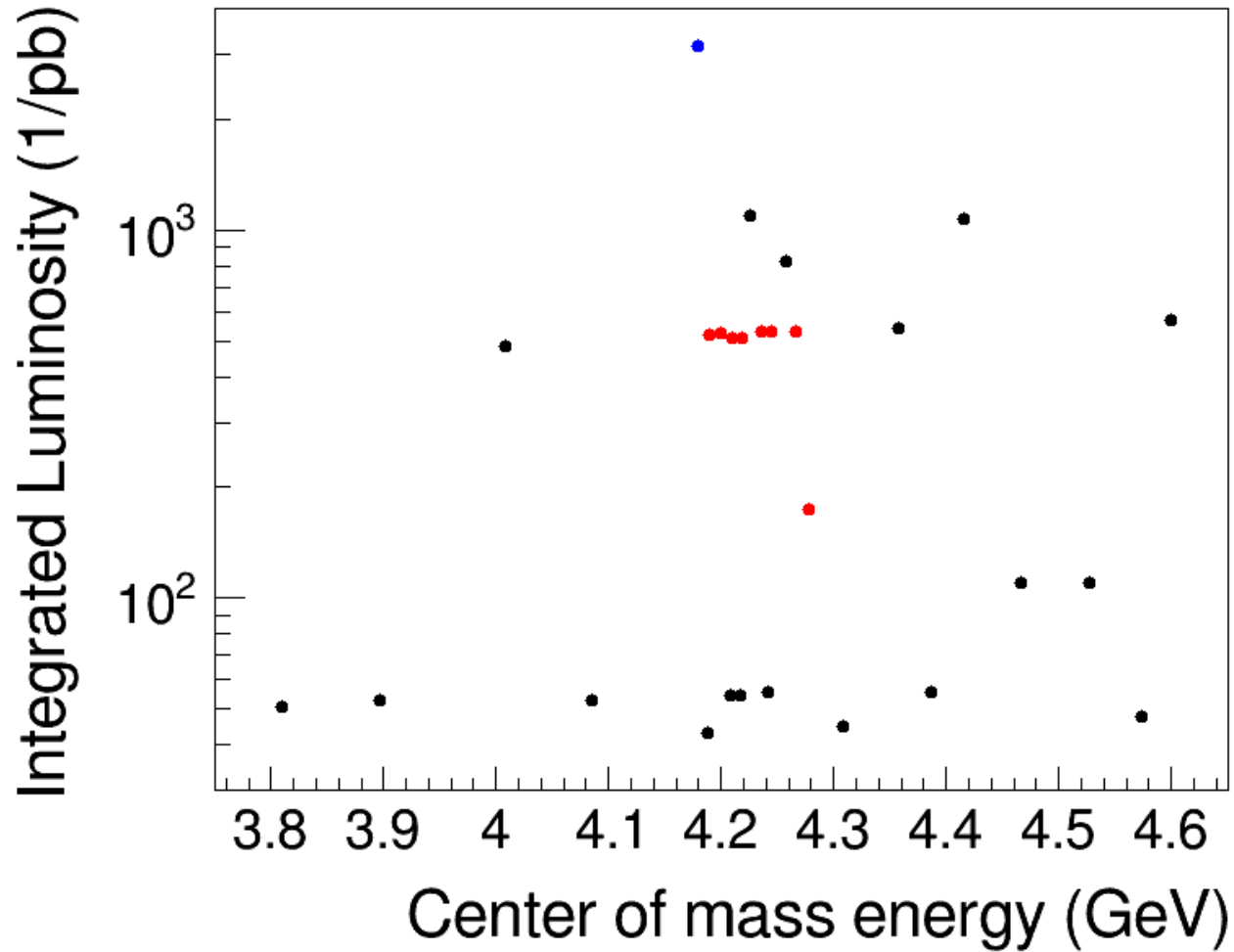
年度工作汇报

朱凯（高能所）

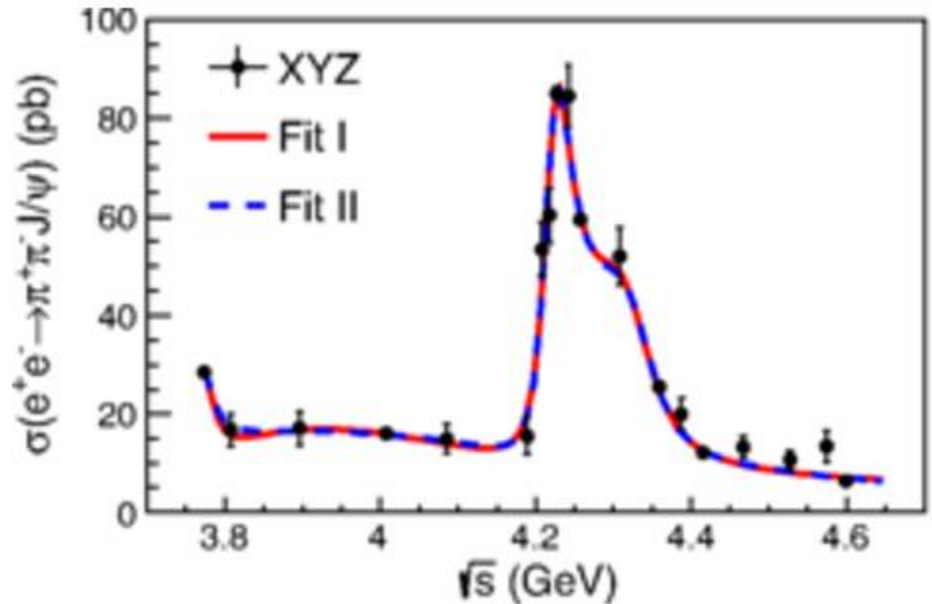
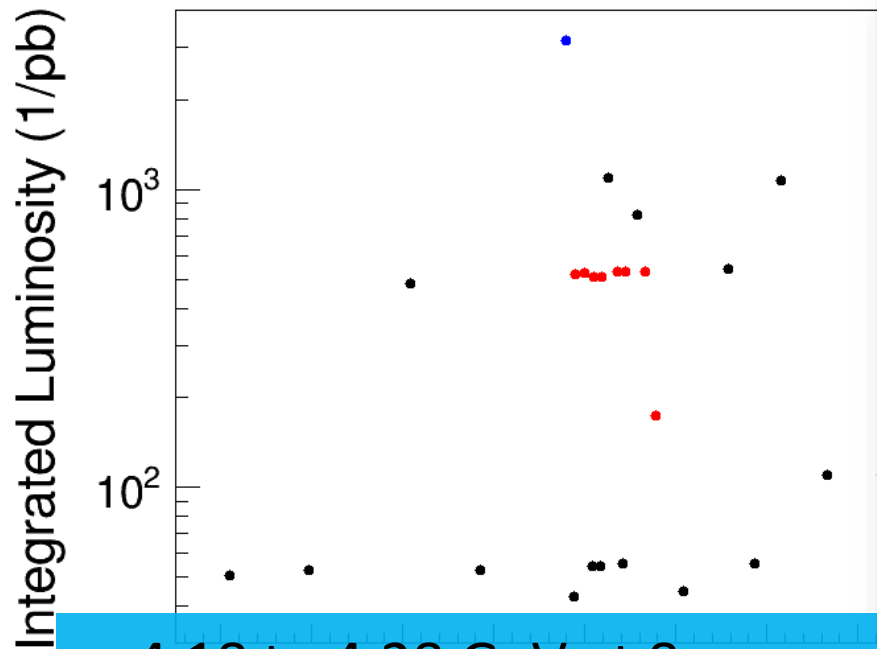
2017年12月1日

中国科学院粒子物理前沿 卓越中心

New BESIII XYZ scan data at 2017

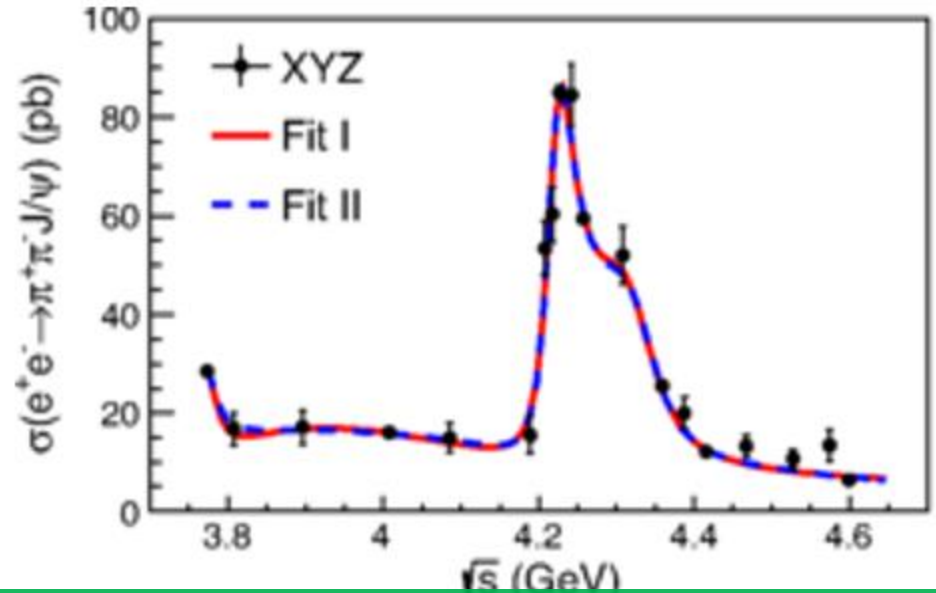
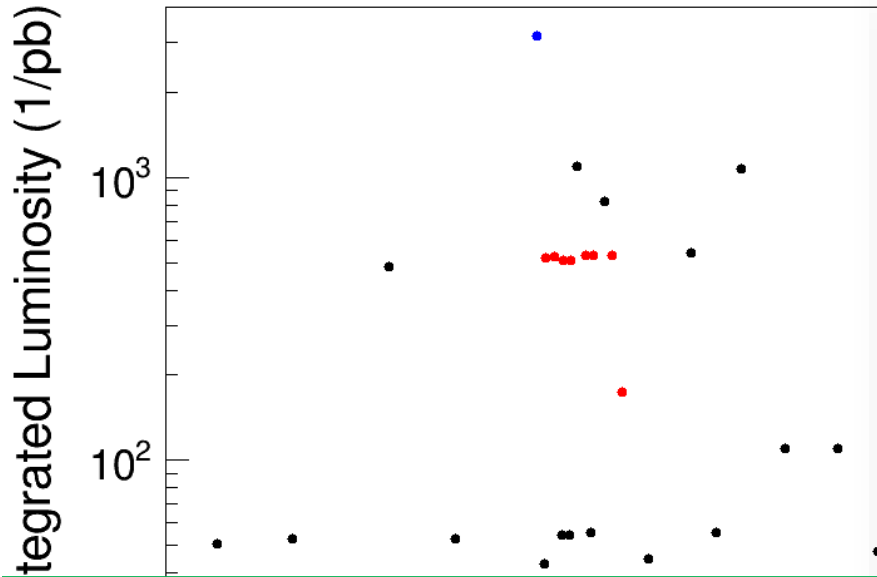


New BESIII XYZ scan data at 2017



- 4.18 to 4.28 GeV at 8 energy points.
- Crucial for further studies of exotic Y states at this energy region and related X and Z states.
- A bunch of exciting physics analyses have been reported at the BESIII internal meetings and workshops

New BESIII XYZ scan data at 2017



- As both charmonium group convener and weekly coordinate I fully involved in this data taking as propose, take, coordinate, shift, on-line monitor, off-line checks and calibrations, and so on.
- At present, we are estimating systematic uncertainty and generating inclusive MC samples, new physics results based on this data sample are coming.

BESIII Charmonium group convener

- As a charmonium group convener, I also work on arrangement and coordination of physics analyses and other activities inside the group.
- In 2017 (till Oct. 13), we have 24 group meetings with 66 reports presented; 16 new analyses applying for collaboration internal review; 20 papers have been submitted to or published in journal (23 with 6 PRL till Nov. 23).
- The charmonium group is active and productive this year!

Personal physics analyses

- My personal physics interest mainly covers charmonium decays and studies of XYZ states.
- Charmonium decaying into baryons and mesons:
 - $\psi' \rightarrow p\bar{p}$ and $n\bar{n}$
 - $\psi' \rightarrow \Sigma\bar{\Lambda} + \text{c.c.}$, $\chi_{cJ} \rightarrow \Lambda\bar{\Lambda}$
 - $\psi' \rightarrow \phi KK$ and $\phi\pi\pi$
 - $\psi' \rightarrow p\bar{p}\eta'$
 - $h_c \rightarrow \text{hadrons}$
- Search new decays modes of XYZ:
 - $e^+e^- \rightarrow K_S K\pi\pi^0$
 - $e^+e^- \rightarrow \phi\eta_c$ or $\phi\eta'$

Personal physics analyses

- My personal physics interest is wide, that mainly covers charmonium decays and studies of XYZ states.
 - Charmonium decaying into baryons and mesons:
 - $\psi' \rightarrow p\bar{p}$ and $n\bar{n}$ (INFN)
 - $\psi' \rightarrow \Sigma\bar{\Lambda} + \text{c.c.}, \chi_{cJ} \rightarrow \Lambda\bar{\Lambda}$ (Mo. Y.J.)
 - $\psi' \rightarrow \phi KK$ and $\phi\pi\pi$ (Cai H.)
 - $\psi' \rightarrow p\bar{p}\eta'$ (Wu. L.J.)
 - $h_c \rightarrow \text{hadrons}$ (Wu. L.J.)
 - Search new decays modes of XYZ:
 - $e^+e^- \rightarrow K_S K\pi\pi^0$ (Yang L.)
 - $e^+e^- \rightarrow \phi\eta_c$ or $\phi\eta'$ (Wang C.W.)
- First observaton

Personal physics analyses

- My personal physics interest is wide, that mainly covers charmonium decays and studies of XYZ states.
 - Charmonium decaying into baryons and mesons:
 - $\psi' \rightarrow p\bar{p}$ and $n\bar{n}$ (SPA)
 - $\psi' \rightarrow \Sigma\bar{\Lambda} + \text{c.c.}$, $\chi_{cJ} \rightarrow \Lambda\bar{\Lambda}$ (CWR)
 - $\psi' \rightarrow \phi KK$ and $\phi\pi\pi$
 - $\psi' \rightarrow p\bar{p}\eta'$ (CWR)
 - $h_c \rightarrow \text{hadrons}$ (draft)
 - Search new decays modes of XYZ:
 - $e^+e^- \rightarrow K_S K\pi\pi^0$ (draft)
 - $e^+e^- \rightarrow \phi\eta_c$ or $\phi\eta'$
- Five of them are mature, expected to be published soon.

Speaking for BESIII

- I have spoken for BESIII at two international conferences/workshops, and give several talks/lectures at domestic meetings/workshops.



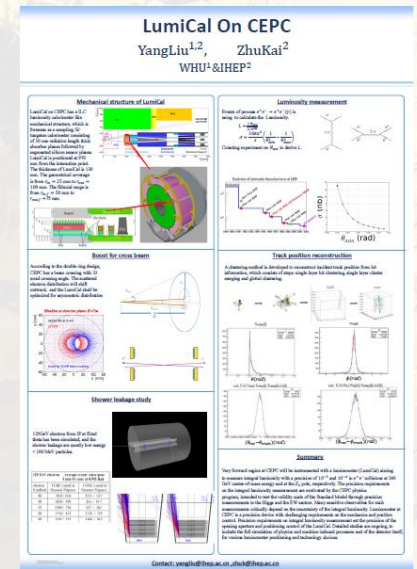
- I have taken a one month visit at Turin University during Aug. and Sep. to improve the cooperation on the BESIII measurement.

Other duties at BESIII

- In charge of the dE/dx calibration and simulation. We (Jinfa and Jake) have finished this work successfully for the new data samples taken this year. The calibration parameters are used in data reconstruction with newest BESIII- offline-software version.
- Other BESIII service works such as internal referee, etc.

Working for CEPC

- CEPC luminosity calorimeter concept design study
 - reconstruction/calibration/simulation (Yang L.)
 - organize bi-weekly group meeting.
- Now LumiCal group is active; the first version of concept design report (CDR) is ready.



谢谢!

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