2019 XYZ data taking strategy

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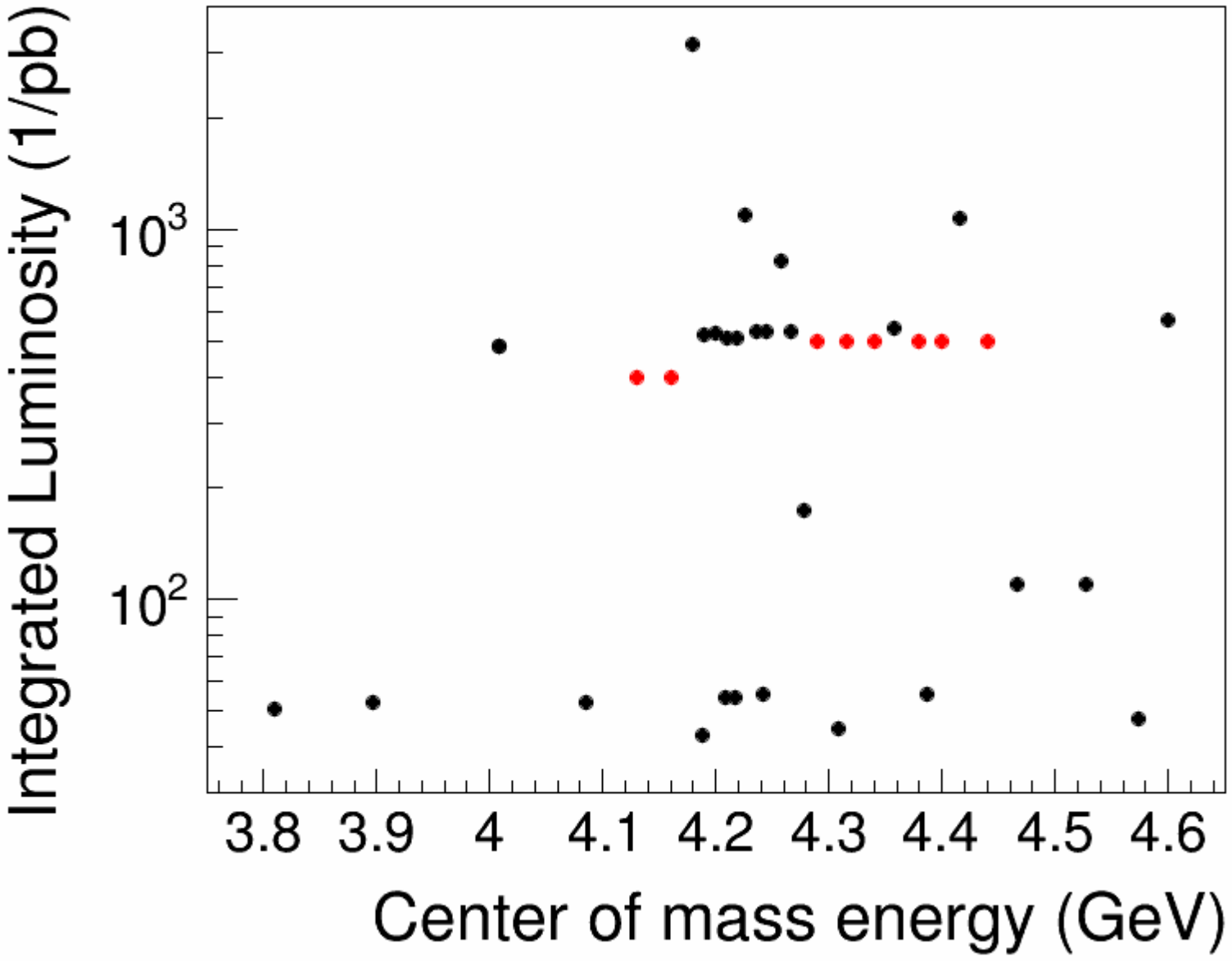
Data taking schedule and some predictions

- The plan we submitted to CAS for 2018-19 running year
  - 2018: Nov. 17-Dec. 31, 44 days
  - 2019: Jan. 1-June 20, 171 days
  - total 215 days.
- Firstly 4 Billion J/psi, followed by XYZ
- J/psi+continuum，4 billion+100/pb：2months+4days ~ 64 days
  - Beijiang: 25/pb/day*3400nb*80%=68 million/day; 4 billion = 59 days
- XYZ: 151 days
  - 151days*25/pb/day= **3775/pb**

Data taking strategy (to discuss)

CMS(GeV) L (/pb)							
4.13	4.16						
400	400						
4.28	4.29	4.315	4.34	4.38	4.40	4.44	
0	500	500	500	500	500	500	

We may take the two points right after J/psi data taking


Integrated Luminosity (1/pb)
10^3
10^2
3.8
3.9
4
4.1
4.2
4.3
4.4
4.5
4.6
Center of mass energy (GeV)

Back up

J/psi status, from Beijiang's talk

Status

Luminosity

- The normal luminosity can be up to

~25 pb^{-1}/day

Number of J/ψ

- (1.3+4.6) ~ = 6 billions for now

Cross section

- ~ 3400 nb on average
- Beam energy spread is not ideal in some periods

~2 months of beam time has been lost due to machine issues. The plan is NOT finished yet.

- 4 billion/ (25 pb^{-1}/day * 3400 nb * 80%)

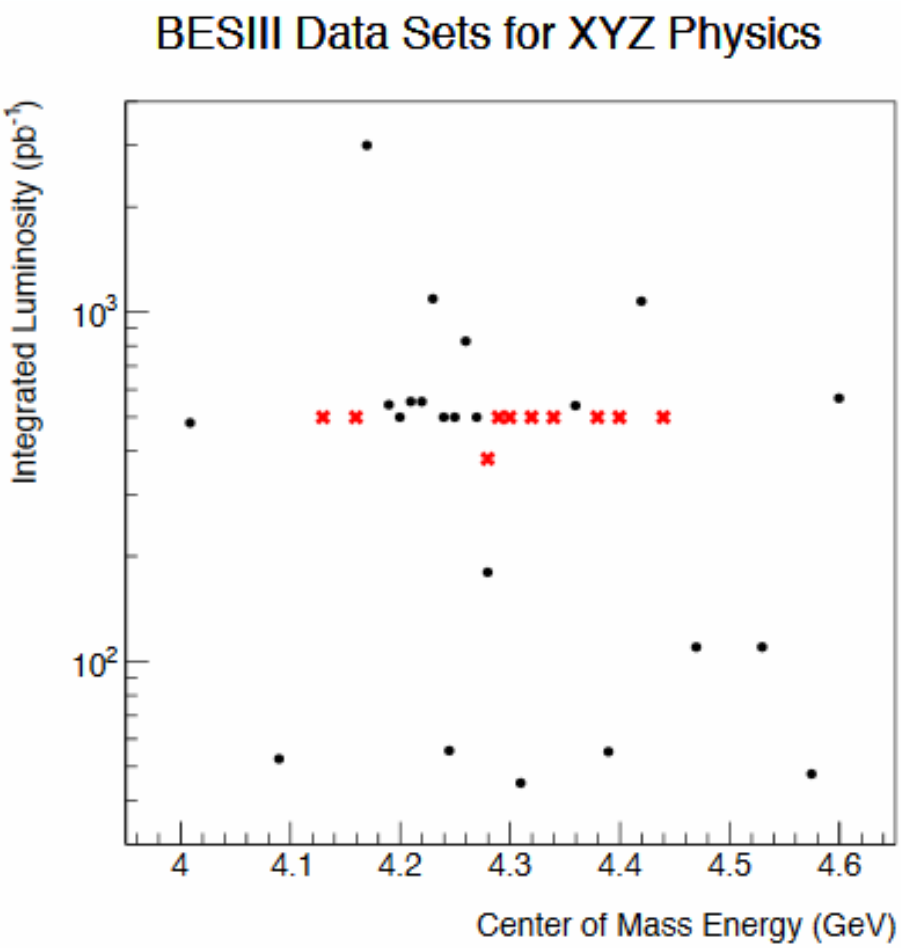
~= 2 months

- + 4 days of data taking @ 3.08 GeV for BG

We need 2.5 months to achieve the goal.

From https://Ryan's talk

Future of XYZ Data-Taking: 2019 Proposal



2019 data *(in pb^{-1} and MeV, rounded):*
300 at 4280;
500 at 4290, 4300, 4320, 4340, 4380, 4400, 4440;
500 at 4130, 4160
(total of 10 points)

Primary Goals:

* Understand the **Y** states by completing a map of cross sections.

* Learn about the $\mathbf{Z_c}$ states by observing the evolution of Dalitz plots and $\mathbf{Z_c}$ line shapes.

The original proposal should be reduced due to reality.