

Path forward with finishing engineering run analysis

Matt Graham & Nathan Baltzell

HPS May 2018 Collaboration Meeting

May 23, 2018

Data processing and MC status

- 1.1 GeV (2015)
 - 0.5 mm
 - data is processed and final
 - full mc samples are finished
 - 1.5 mm
 - data is processed and final
 - full mc samples are getting started soon, pending final decisions on beam position and profile parameters
- 2.3 GeV (2016)
 - final SVT alignment in progress
 - need feedback from analysis group (us)
 - need to process final data soon
 - within next 6 months, well before 2019 run

- 1.1 GeV (2015)
 - bump hunt
 - 0.5 mm – Omar’s analysis is complete
 - analysis note and paper update, collab review, submission
 - 1.5 mm – Annie’s analysis, needs to be taken over by someone else if we’re going to publish it
 - mg...I think we should make an effort to get this result done, though may take redoing it using Omar’s framework
 - vertexing
 - 0.5 mm – Holly’s analysis, Matt Graham is taking this over (mg...”not really”)
 - 1.5 mm – ?
 - mg...I don’ think this is a priority or even needs to be done at all...we won’t have anywhere close to reach even with 0.5mm and our vertex “result” will just be a demonstration; actually, the most important part of the result will be showing that our backgrounds are under control.

I think it’s really important to get

2016 Engineering (Physics) Run

- 2.3 GeV (2016)
 - bump hunt – Sebouh’s analysis is almost complete
 - need to implement the recent lessons learned by Omar
 - include systematics following Omar’s methods
 - then time to start an analysis review
 - include 2016 1.5mm data ✓
 - vertexing – Bradley / Matt Solt(?) / MattG
 - MattS has shown some vtxZ vs mass plots for this in this meeting
 - Should include L(1-2)L(1-2)
 - it would awesome if we could incorporate some MVA/ML techniques to help reject bad vertices; better background estimation
 - might we get some reach here?
 - SIMPS — MattS/Miriam
 - see tomorrow’s talk...interesting stuff!