Welcome and Thanks

• As conveners of this TDAQ session, we warmly welcome your participation to this TDAQ session
• Special thanks to the presenters of talks in this session for their contributions!

Zhen-An and Dave*

*New to project, emergency stand-in
Introduction

• Brief Summary
  – 2015 Physics + Detector regular meeting at IHEP
  – 2016 TDAQ Started discussion
  – 2017 IHEP TDAQ Team started activities
  – 2018 TDAQ Session at CEPC Workshop
    • Called for more participation with welcome
Introduction (continued)

• **FE Readout**
  – More involvement in Detector Discussion at IHEP
  – Technical Discussion on ASIC readout
  – Undecided TRIGGERLESS readout? (see next slide)

• **Backend Readout**
  – Investigation on integration of Machine interfacing
  – Fast Control distribution
  – Slow Control
  – FE partial DAQ

• **Trigger**
  – Need more involvement in Detector discussion
  – Common Hardware R&D for TDAQ has started at IHEP

• **DAQ**
  – Conceptual Design ready
  – Software R&D started at IHEP
Triggered vs Triggerless

- Perhaps a more subtle question
  - In some modes, no need for strong data selection
  - In Z-factory mode, exhaustive readout seems ‘hard’
- There may be a wider spectrum of possibilities
  - Data pre-processing on the detector
  - Large buffers on detector, immediate HLT / event building
- Other questions
  - What is the acceptable / available buffering on detector?
  - What is the acceptable readout power consumption / material?
  - Hardware trigger vs CPU vs mixed architecture
  - Use of exclusively COTS components off detector?
- Talks will illustrate relevant ideas from other projects
Welcome Info

• Collaborations and new ideas on TDAQ are always welcome
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• Where should we be for TDR? Some ideas:
  – Careful study of technical constraints and costs
  – Some exemplar system designs with different technologies
  – More detailed discussion of selection / processing strategy

“The Z-pole run, with a lower magnetic field and high event rate, represents a challenge for the tracker design and requires a detailed strategy for the data acquisition and processing capacity of the experiment.”