

# EIC Detector-1 Simulation, Production, QA - Planning

Working Group: EW/BSM

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1. **CC-DIS** 18x275 , 10x275, 10x100 GeV , ep ( $Q^2 > 100 \text{ GeV}^2$ ):
  - a. 2M
  - b. DJANGO, Pythia8 or HERWIG
  - c. Reference detector design
  - d. Central tracks , EMCAL, HCAL , Jets.
  - e. JB reconstruction
  
2. **LG** ( e to tau ) 18x275 , ep ( $Q^2 > 10 \text{ GeV}$  and  $Q^2 > 100 \text{ GeV}$  )
  - a. 1M
  - b. LQGENEP
  - c. Reference detector design
  - d. Tracks, vertex, EMCAL, HCAL, Jets.
3. **For background studies: NC(  $Q^2 > 1 \text{ GeV}^2$  ) , CC( $Q^2 > 100 \text{ GeV}^2$ ) and PhP( $Q^2 < 1 \text{ GeV}^2$ ) samples.**
  - a. 2-10 M
  - b. DJANGO, Pythia8 or HERWIG
  - c. Reference detector design + far-backward
  - d. Central tracks , EMCAL, HCAL , Jets.
  - e. Low- $Q^2$  detectors for PhP sample
  
4. **NC**
5. **Dark photon**
6. **Charm in CC ( s-> c ) a dedicated CC sample with s-> c conversion**
  - a. 2-10 M
  - b. DJANGO, Pythia8 or HERWIG
  - c. Reference detector design + far-backward
  - d. Central tracks , EMCAL, HCAL , Jets.
  - e. Vertex, PID ,
  
- 7.

8.