preTDR timeline

S. Dalla Torre (ePIC collaboration meeting, July 27): <u>https://indico.bnl.gov/event/20727/contributions/93080/</u>

Only 2 preTDR draft versions in 2024 to minimize the load in view of the end-of-year "milestone"

- Version0 by September 29
 - All preTDR text is there, even if it can be in a rough version
 - Additional material: planning required, part already in
 - <u>Plots</u> for Version0 can make use of a scattered set of simulation campaigns
- During October 2024, internal review process!
 - Recommendations to be integrated in Version1
- Version1 by December 1
 - More refined text
 - Recommendations form the internal review have to be integrated
 - The <u>additional material expected</u>, it can still be in a rough text version
 - Plots for Version1 make use of the October simulation campaign
 - Version1 is the material that will be used for the Jan. 2025 DOE OPA review

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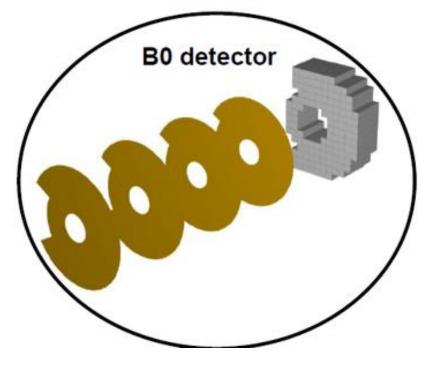
BO detector - status

ECAL

- Position fixed
- Geometry (arrangement of the crystals) fixed

Tracker

- Position work in progress
 - Fix equal-distance arrangement?
 - > Distance of the 4th layer from the ECAL crystals (heat dissipation)
- Geometry: for now, simple geometry with circles
 - Do we have realistic geometry it in CADI?



preTDR - simulation studies

We need to prioritize what is realistic to achieve by the end of September

Performance

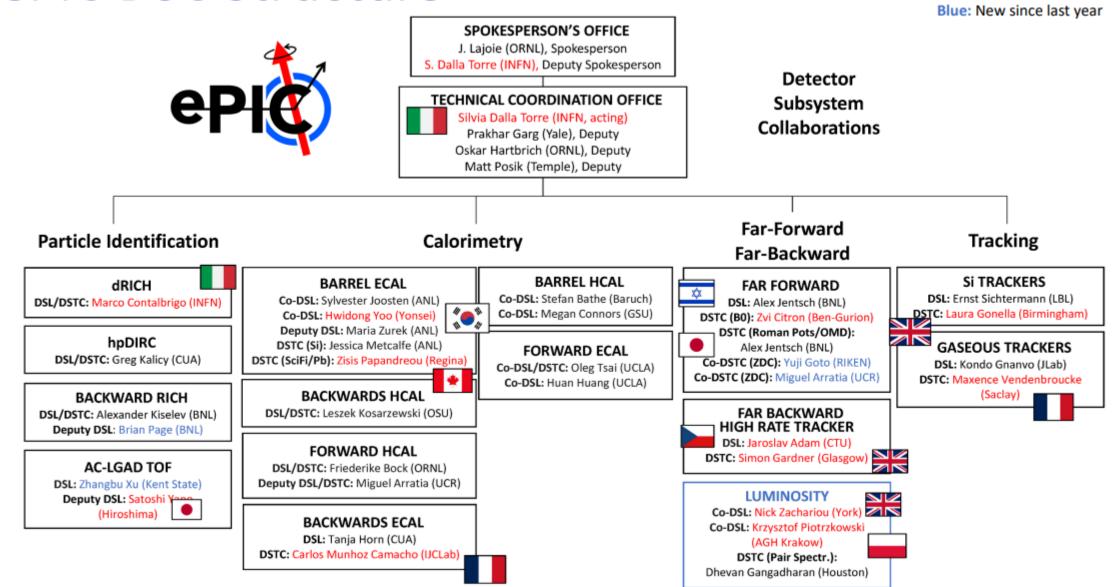
- Repeat ECCE plots
- Use 2208.14575 as a starting point
- Additional sections? (Soft photons, ToF, ...)

Physics – anything urgent?

- VM production (BGU)
- Photon spectra from Pb ion de-excitation (Eden)
- u-channel backward DVCS (Michal)
- Photon-photon interactions (Michael)

Extras

J. Lajoie: <u>https://indico.bnl.gov/event/20727/contributions/93199</u> **epic DSC Structure**



Red: International

Proposal for EIC Science Program in the First Years

Year - 1	Year - 2	Year - 3	Year - 4	Year - 5
Start with Phase 1 EIC New Capability: Commission electron polarization in parallel Run: 10 GeV electrons on 115 GeV/u heavy ion beams (Ru or Cu) → Physics: gives world-wide new data on 1PDFs and a first look on saturation	 Start with Phase 1 EIC Commission electron polarization in parallel New Capability: Commission hadron polarization in parallel Run: 10 GeV electrons on 130 GeV/u Deuterium Physics: gives world-wide new data → critical baseline for nPDFs and saturation free vs. bound proton structure Run: Last weeks 10 GeV electrons and 100 GeV polarized protons Physics: first look to 3d imaging of the proton 	Start with Phase 1 EIC Commission electron polarization in parallel Commission hadron polarization in parallel New Capability: Commission running with hadron spin rotators Run: 10 GeV electrons on 100 GeV transverse polarized protons Physics: 3d imaging of the proton / mass of the nucleon Run: Last weeks switch to longitudinal proton polarization Physics: first look helicity structure of the proton – unravel quark, gluon and orbital angular contributions	Start with Phase 1 EIC Commission electron polarization in parallel Commission hadron polarization in parallel Commission running with hadron spin rotators New Capability: Commission hadron accelerator to operate with not centered orbits Run: 10 GeV electrons on 250 GeV transverse and longitudinal polarized protons Physics: 3d imaging of the proton at low x helicity structure of the proton – unravel quark, gluon and orbital angular contributions	 Start with Phase 1 EIC Commission electron polarization in parallel Commission hadron polarization in parallel Commission running with hadron spin rotators Commission hadron accelerator to operate with not centered orbits Run: 10 GeV electrons on 166 GeV transverse and longitudinal polarized He-3 Physics: 3d imaging of the nucleons → flavor separation helicity structure of the nucleon–unravel helicities for different quark flavors first look to nuclear binding

Time to install additional ESR RF and HSR PS to reach design Current and max. Energies