

# EPIC SIDIS Working Group

Charlotte Van Hulse, Stefan Diehl

**Wiki of the SIDIS PWG:** <https://wiki.bnl.gov/EPIC/index.php?title=SIDIS>

→ Up to date

→ Contains all important information

**PWG meetings:** Tuesday 2.30 pm (~ every 2 weeks)

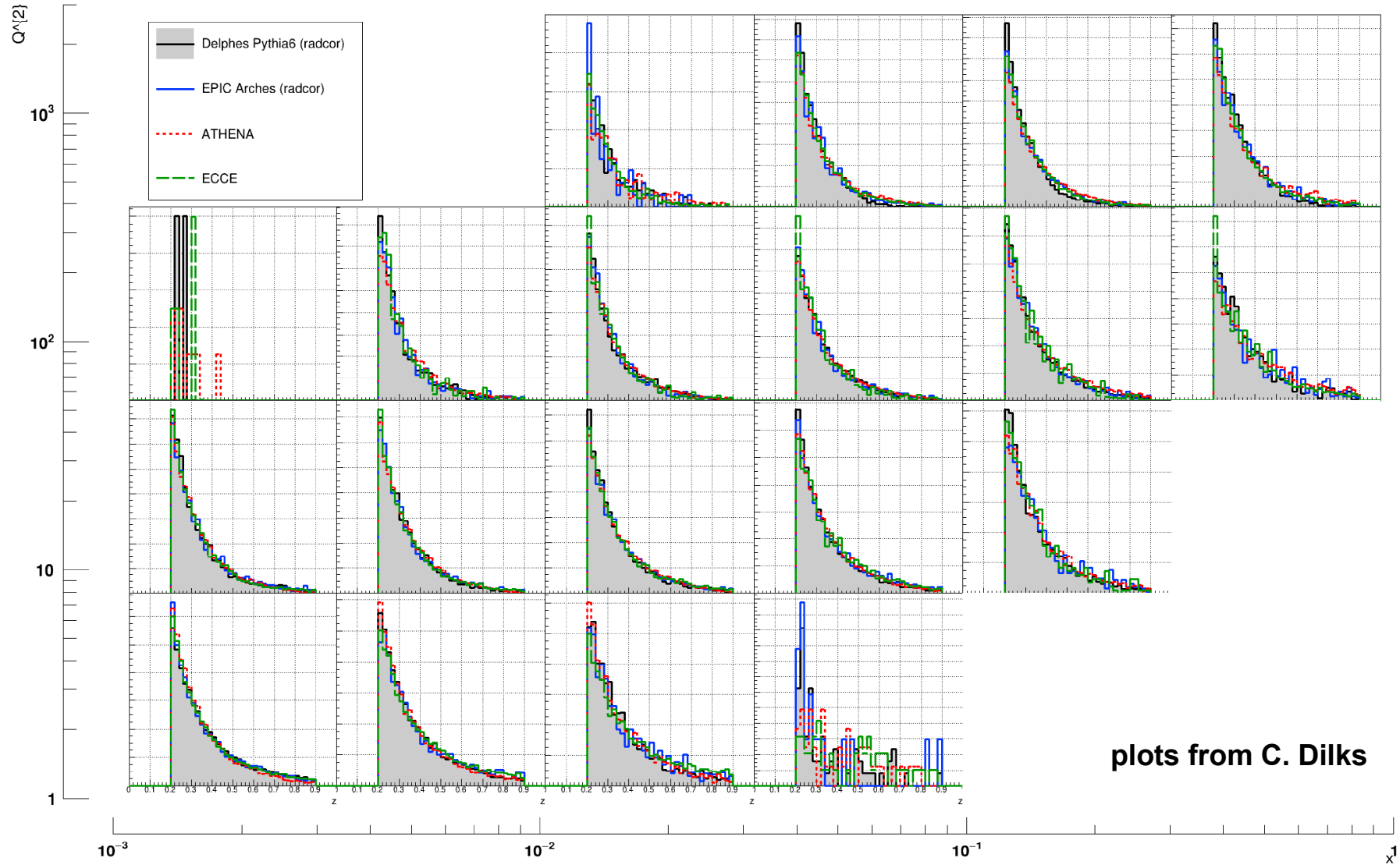
**Detector benchmarks:**

- (SI)DIS resolutions and coverages ( $x_B$ ,  $Q^2$ ,  $z$ ,  $P_T$ ,  $\Phi_h$ )
- PID quality (e/ $\pi$  K/ $\pi$  separation)

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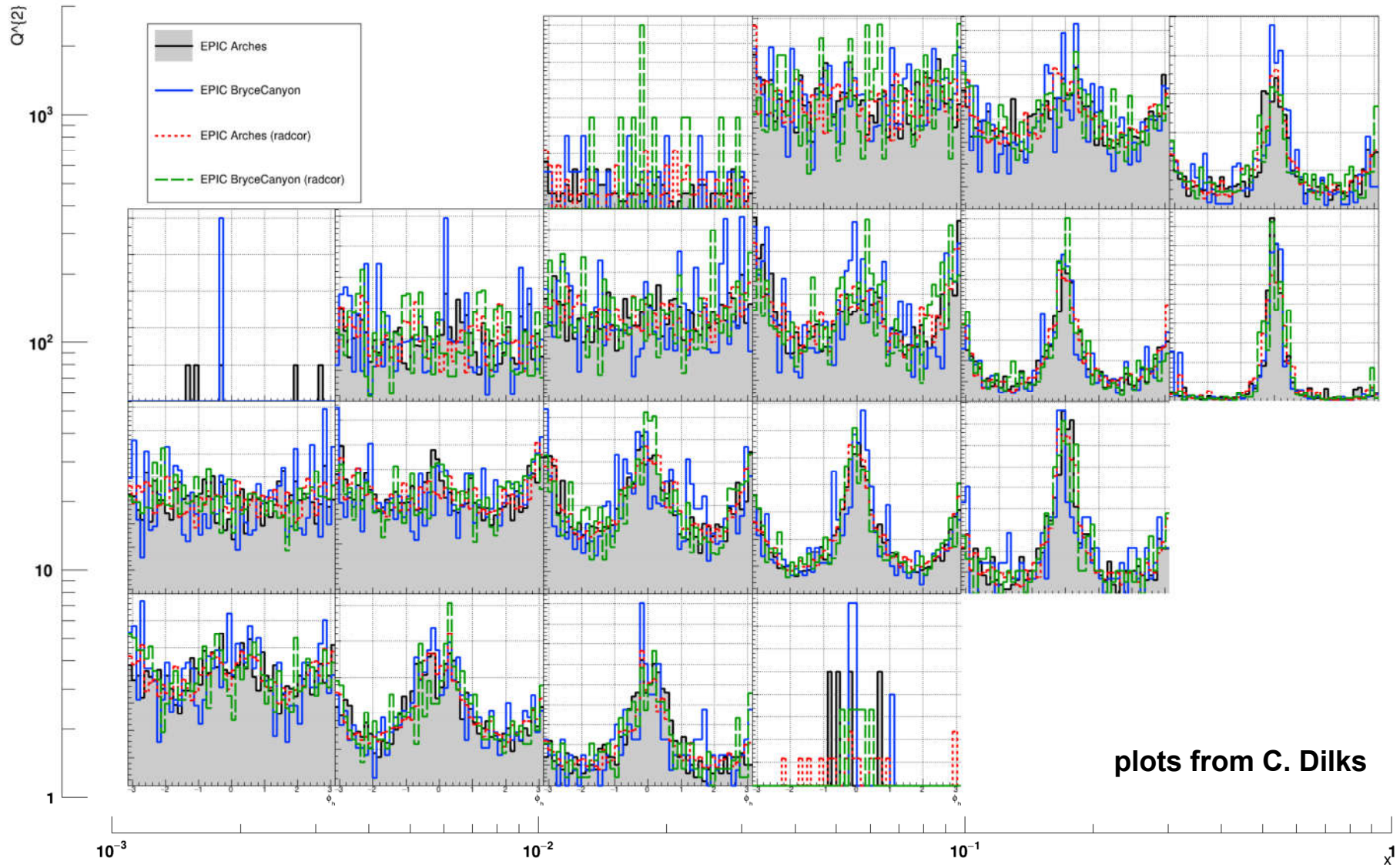
## Benchmark plots: z coverage for the different $Q^2$ - $x_B$ ranges



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**Benchmark plots:  $\Phi_h$  coverage for the different  $Q^2$ - $x_B$  ranges**



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## Physics benchmarks:

- $A_{LL}$  measurements → Sea-quark helicity PDFs
- Unpolarized cross sections → Spin-independent TMD PDFs/FFs
- Sivers/Collins asymmetries → Sivers TMD, Collins FF
- Dihadron asymmetry → Transversity and tensor charge via collinear dihadron FF
- Back-to-back di-hadron asymmetries → Saturation
- Lambda Polarisation → Polarized FFs

## Details on the benchmark physics channels can be found here:

[https://indico.bnl.gov/event/17621/contributions/70630/subcontributions/2135/attachments/45495/76765/2023\\_01\\_11\\_ePIC\\_SIDIS.pdf](https://indico.bnl.gov/event/17621/contributions/70630/subcontributions/2135/attachments/45495/76765/2023_01_11_ePIC_SIDIS.pdf)

[https://indico.bnl.gov/event/15342/contributions/65968/attachments/42422/71057/WG\\_SIDIS\\_EICUGJuly22.pdf](https://indico.bnl.gov/event/15342/contributions/65968/attachments/42422/71057/WG_SIDIS_EICUGJuly22.pdf)