



UNIVERSITY OF
BIRMINGHAM

UoB contributions to the YR tracking WG

P. Allport, L. Gonella, P. Ilten, P. Jones, P. Newman, H. Wennl6f

EIC-YR Tracking Detectors Working Group meeting

20 February 2020



UoB contributions to the YR tracking WG

- Work already done as eRD18 (see next slide with link to material)
 - **Survey of silicon sensors technologies** for vertex and tracking at the EIC
 - Technology investigations into **depleted MAPS** (i.e. HV/HR-CMOS)
 - Preliminary set of **specifications for an EIC specific sensor**
 - Feasibility study into a **low power pixel FE architecture** for an EIC sensor
 - Results from **basic layout simulations** based on EICRoot
 - Baseline performance plots for a Si+TPC and all silicon tracker design (central and forward regions)

- Work starting
 - R&D into **new generation MAPS (65 nm)** as baseline EIC Si vertex and tracking technology
 - **Physics performance simulations** with G4E framework
 - Software already installed and running (thanks for Yulia & Dmitry)
 - Main interest in heavy flavour physics simulations



eRD18 reports and talks

- <https://wiki.bnl.gov/conferences/images/0/05/BhamEICProposal-15Jun.pdf>
- <https://wiki.bnl.gov/conferences/images/3/32/BhamEICProposal.pdf>
- https://wiki.bnl.gov/conferences/images/7/7d/ERD18_ReportJan17.pdf
- <https://wiki.bnl.gov/conferences/images/e/e3/ERD18UpdateJan17.pdf>
- https://wiki.bnl.gov/conferences/images/f/fd/ERD18_ReportJun17.pdf
- <https://wiki.bnl.gov/conferences/images/1/1d/ERD18ReportJuly17v3.pdf>
- https://wiki.bnl.gov/conferences/images/7/72/ERD18_ProgressReport_Jan2018.pdf
- <https://wiki.bnl.gov/conferences/images/7/78/ERD18ReportJan18v1.pdf>
- <https://wiki.bnl.gov/conferences/images/d/dc/ERD18-Report-FY19Proposal-Jun18.pdf>
- https://wiki.bnl.gov/conferences/images/9/97/ERD18-FY18Report-FY19Proposal_v2.pdf
- <https://wiki.bnl.gov/conferences/images/c/c0/ERD18ReportDec18.pdf>
- <https://wiki.bnl.gov/conferences/images/c/c5/PeterJones.pdf>
- https://wiki.bnl.gov/conferences/images/5/59/ERD18_Report-FY20Proposal-Jun19.pdf
- <https://wiki.bnl.gov/conferences/images/8/87/ERD18ReportJul19v1.pdf>
- https://wiki.bnl.gov/conferences/images/3/30/ERD18_Jan-2020.pdf
- <https://wiki.bnl.gov/conferences/images/6/65/ERD18ReportJan20v0.1.pdf>

- **Summary on DMAPS technology investigations:**
 - https://wiki.bnl.gov/conferences/images/9/9a/ERD18_TJ-Summary-Jun19.pdf
 - <https://doi.org/10.1016/j.nima.2019.163381>

