

BGC Collaboration wrap-up

Ray Veness

13th December 2023

Ray's *takeaway* and actions page 1

- Ray
 - *We need to take some decisions...*
- Carsten:
 - *Strong UK interest with additional resources in the pipeline and many possible publications.*
- Oliver
 - *Mature simulation tool with benchmarking - ready for new requirements for v4 and beyond*
 - **Define a new set of specification parameters for v4 LHC simulations**
- Sameed
 - *BGC for EBTS is justified by detection of reflected electrons from the collector*
- Ondrej
 - *First measurement of LHC ion beam through the cycle. Already some ideas for improving the design.*
 - **Waiting to analyse data on ion x-section through the cycle.**
 - **Need to de-convolute the vertical profiles**
 - **Understand the ion beam focus issue**
 - **Need to re-optimize optical system for v4**

Ray's *takeaway* and actions page 2

- Daniel
 - *BGC does not seem a show-stopper for LHC operations. Improving the BGC by shielding could require a large investment, but more data may help understanding.*
 - **Request a BatMon campaign to get reliable data**
- Alex
 - *Interesting work at CI to qualify the BGC components and supply data to support it as a scientific instrument.*
 - **What data would help to support cross-section measurements in the LHC**
- Cristina
 - *Use of Ne seems generally acceptable, N2 may be limited by NEG saturation, but there are a number of questions that could be addressed.*
 - **We need to justify the case to use N2 in the LHC.**
- Leonie
 - *Some impressive, and expensive cameras on the market. LHC radiation environment still probably limits our choice.*

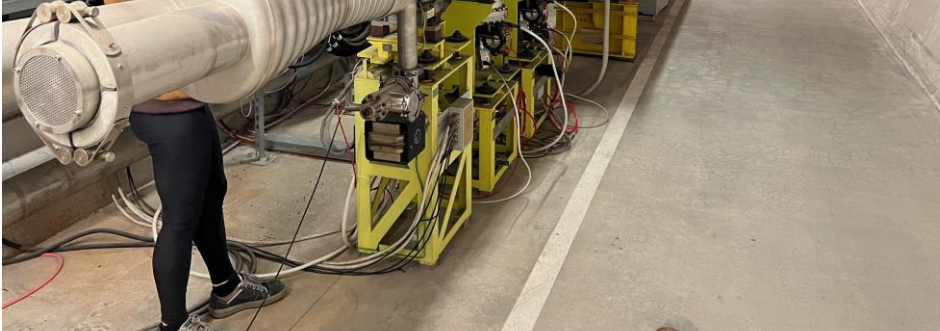
Ray's *takeaway* and actions page 3

- Adriana
 - *We all agreed to freeze a nice design and start production, but did Serban crash the party?*
 - **All agreed that we will freeze the design and go for manufacture.**
- Denys
 - *Electron or ion trapping seems not to be an issue for the BGC in the HEL, but work-in-progress*
- Stefano
 - *Exploring the reach of the BGC for ions and protons as well as steps towards making it operational*
 - **Re-order the image intensifier for the June TS**
 - **Increase the travel of the alignment system in the YETS**
 - **Try to make operational with a fixed display in the CCC for the ion run in the autumn.**
- Ray
 - *We can do better, but by how much?*
 - **Is our first step a v4, or a v3+?**

Ray's *takeaway* and **actions** page 4

- Chiara
 - *We need to keep our mind open to other locations, both in IR4 and elsewhere as we will probably have to justify any choice*
 - **IR6 is an option, but would need to look at the radiation background**
- Serban
 - *The optics design is not optimised for it's current use and there are options to improve both the brightness and the EBTS image.*
 - **What do we really want to optimise? Need integration time rather than resolution for the LHC**
- Gerhard
 - *We need to plan early for changes to the current v3 in the LHC.*
 - **When do we make the change to N2?**

Have a safe trip home, and Merry Christmas everybody



A year ago I felt we had come to a dead-end



I have to admit, I was fe



...but now I can see new horizons for the BGC!