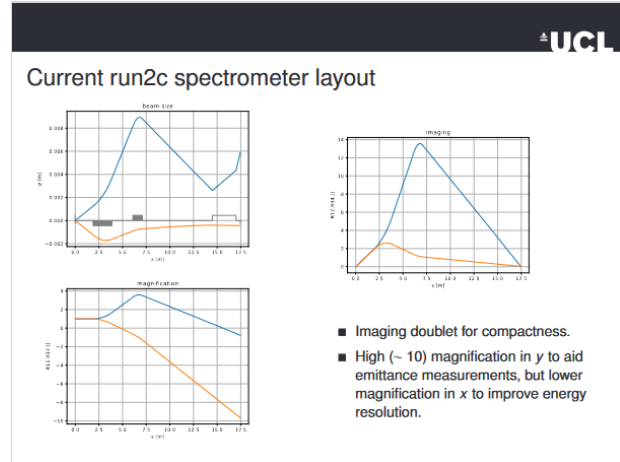


Follow up

- Spectrometer setup: Fern and Collette to access (May 16th) to pull 2 ethernet cables. Additional access(es) in run2 to work on high-res camera mount and installation
- Spectrometer (old camera realignment) ROI could be checked by David before run two sets of eyes confirming position
- Magnet lookup tables (David):
 - Typical dipole settings for beam energy / position on screen
 - Quadrupole settings for beam energy / plasma length
- New spectrometer camera GUI, Background subtraction to be checked
- Emittance measurements, Fern (support from David) to analyse previously taken measurements
- Background studies: Fern to produce background numbers/plots (variation, signal: noise, energy spread) and compare with David's simulations
- CLEAR: Fern to analyse data. Edda states this is low priority for now, due to more pressing tasks ahead of run3.

Run 2c spectrometer design

TB Nov 2023, D. Cooke



- Design within current power converter resources
 - Doublet in series (shunted), old magnets from CERN
- Are we sure that this is sufficient for Run 2c?
 - Triplet? new power converters?
 - Most important Run 2c diagnostic...
 - Are additional studies needed?

UCL

Magnet/power converter considerations

Two power converters in use:

- For dipole: RPPEF.BB4.RBIH.412435, 800 A 350 V 1Q (Model RB9/H)
- For quads: RPADA.BB4.RQNI.412432, 500 A 120 V 4Q (Model COMET_2P)

But upgraded quads *could* be accommodated by the existing dipole PC, assuming e.g. <https://norma-db.web.cern.ch/magnet/idcard/10743/> and <https://norma-db.web.cern.ch/magnet/idcard/2139/> as a doublet in series. These operate up to 700-750 A, and 165 V and 131 V respectively (under certain assumptions about magnet temperature etc. to be checked). This allows focussing up to ~ 10 GeV over < 20 m. Would limit dipole current to 500 A with a simple swap though (current maximum is 540 A (650 A?)).

UCL

Magnet/power converter considerations

■ Can upgrade the dipole too (e.g. <https://norma-db.web.cern.ch/magnet/idcard/5717/>, just increase the length so the current can be lowered (to get the same bend, but accommodated by the power converter).

■ This would require only a new vacuum chamber for the end of the spectrometer line (1 m window could be retained though).

PLAN

Gilles le Godec reached out.
Time to follow up...