

Closing remarks



- Excellent data taking through 2016, well placed:
 - Two publications in preparation:
 - Emittance measurement & field-off scattering
 - Many publications in the pipeline
- Some issues need to be solved:
 - Still some gremlins in reconstruction:
 - Track finding, are the present improvements sufficient?
 - Global tracking, are the improvements sufficient?
 - Analysis:
 - Believe that “swimming tracks” up and down is a “solved problem” ...
 - Is it solved such that the non-expert can easily do this?
 - Some issues in the Monte Carlo:
 - Can we describe the beam more accurately?
 - What is the origin of the momentum-scale mismatch?
 - Processing, can this be made even more efficient? And:
 - What about speed of spinning small MC jobs for analysis cycles?

- Clear plan:
 - Flip-mode LiH
 - Installation and commissioning of LH₂
 - LH₂ Step IV programme
- But pressure:
 - Unless we can gain permission to run in Sep17
 - We have only “one shot” at LH₂
 - Careful planning is the key!

Current Status



Excellent Data- taking run ISIS 2016/ 04.

- Fully staffed 24/7
- Efficient data taking, 160% of expectation achieved.

Upcoming run ISIS 2016/ 05 starts 14/ 02/ 17

- Plan to ramp magnets to operating point today.
- ~20 day run, **near** fully staffed for running 24/7

Liquid Hydrogen

- Stop data- taking early to install Liquid H2 system.
- Ideal option would have been to have H2 for ISIS 2016/ 05 and ISIS 2017/ 01.
- UTD – do we prefer ISIS 2017/ 02 for H2? **Yes**

Next?

~~UTD starts June 2017~~

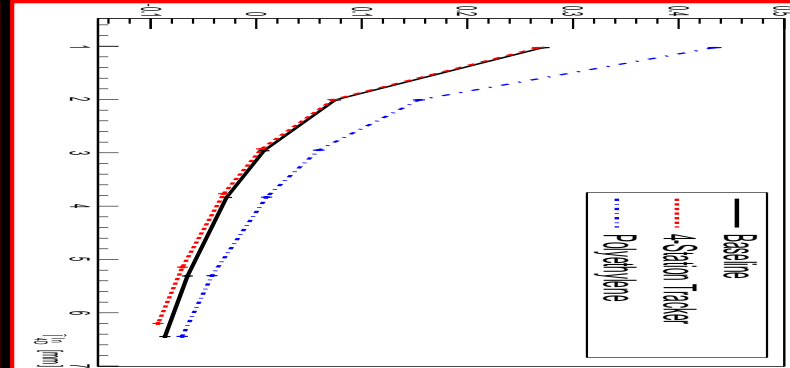
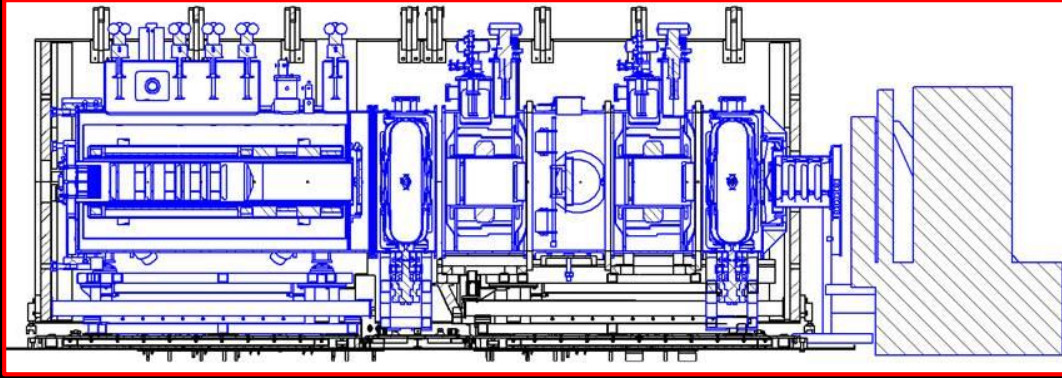
- ~~– Liquid H2. ISIS 2017/01 only.~~
- ~~– H2 system removed June 2017 – never to return?~~

Delay UTD to after ISIS 2017/02

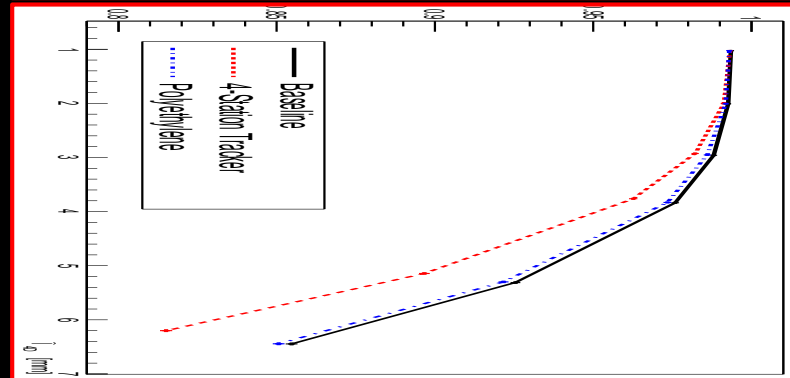
- Data-taking starts in ISIS 2018/01 May 2018
 - use 2 ISIS run periods? Data through to end Oct/Dec 2018?
- Extends overall program – cost.
- Fits better with 'possible' funding profile.

Upgrade to demo

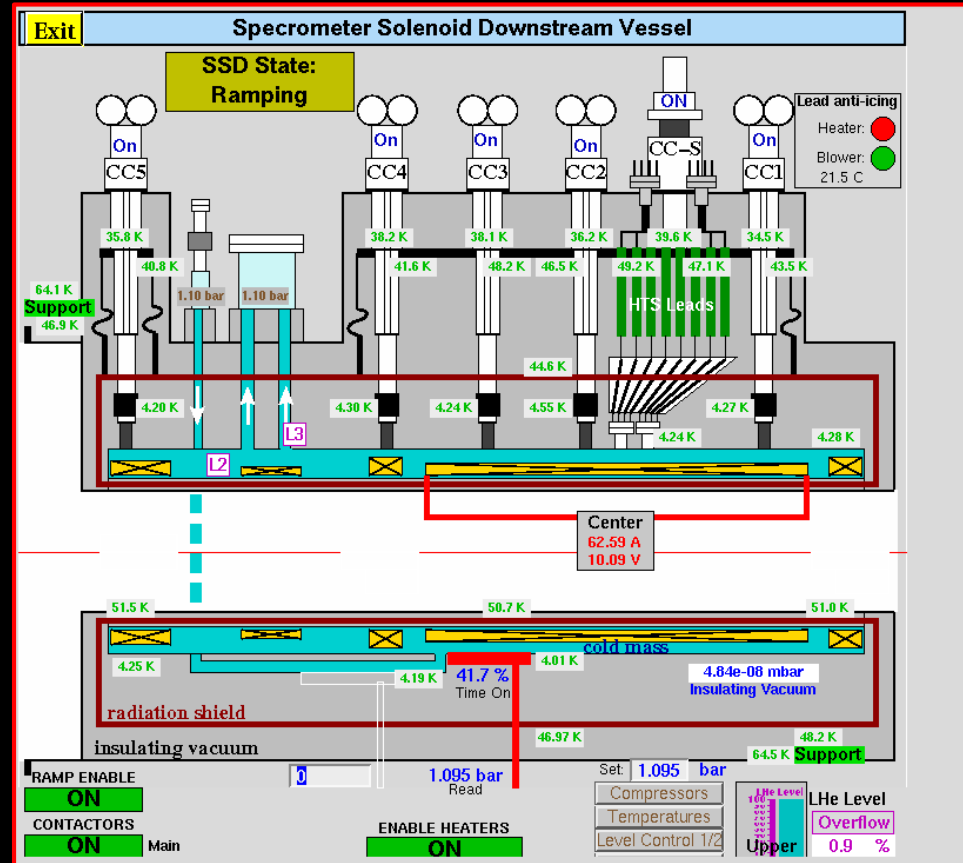
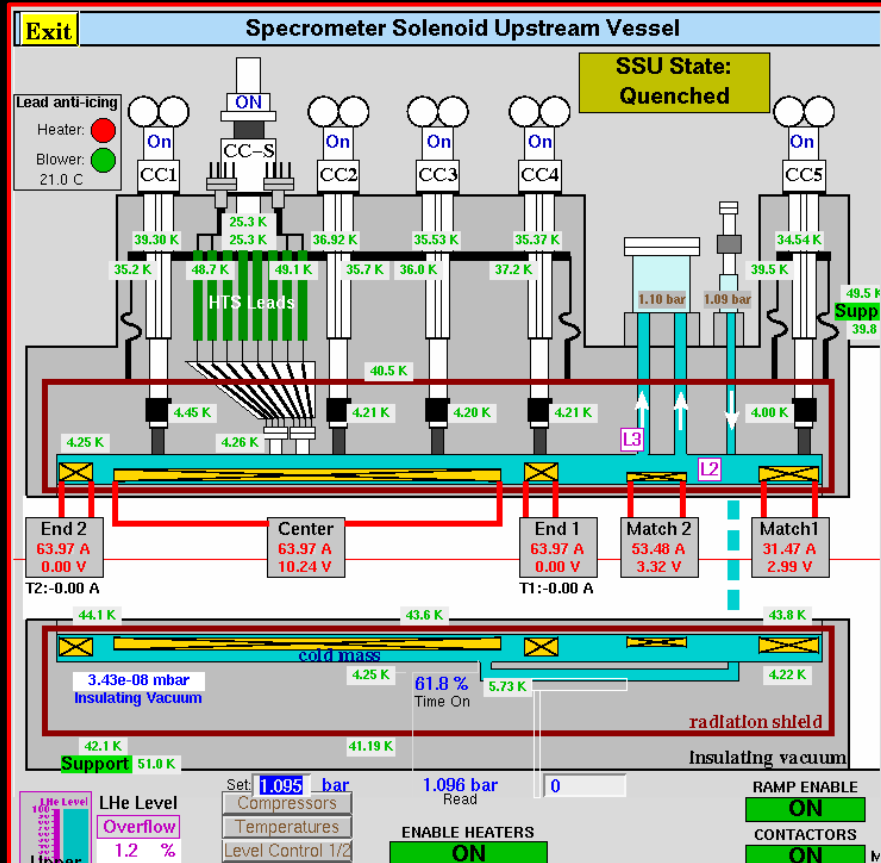
- Collaboration mandate to bring this forward



- Uncertain timetable, but:
 - Bring forward at the “letter of intent” level for review in Mar17



Status of preparation in the Hall



First discussion of nuSTORM in the context of the Physics Beyond Colliders workshop

Thursday 16 Feb 2017, 13:00 → 16:00 Europe/London

Seminar Room 109 (Sir Alexander Fleming Building, Imperial College London)

Kenneth Richard Long (Imperial College (GB))

<https://indico.cern.ch/event/606246/>

Description The physics potential of nuSTORM was presented in the September 2016 "Physics Beyond Colliders" (PBC) workshop. A work-package has been created in the PBC workshop to consider the feasibility of implementing nuSTORM at CERN and to evaluate its performance.



The meeting will review briefly the neutrino physics of nuSTORM and the work that has been done to date on its behalf. It has been set aside in the agenda of the meeting for the discussion of the studies to be pursued in the context of the workshop.

Please make your way to the Exhibition Road entrance of Imperial College London. The Sir Alexander Fleming Building is located on the road that leads from entrance to the College on the left-hand side. It is a large, modern glass structure. Please refer to the map of the College below.


To reach Seminar Room 109, enter the SAF building and go up the short flight of stairs directly opposite the entrance to the end of the mezzanine. Seminar Room 109 is located on the right hand side towards the end of the passage.

The times in the agenda below are local times; i.e. all times are in GMT.








Phone conference details for remote participants are listed in the second attachment below.

 [Map-of-South-Kensington](#)  [Phone-details.pdf](#)

Registration

 This event is open to new participants.

Participants

 Alan David Bross  Ao Liu  Jingyu Tang  Matheus Hostert  Mike Lamont  Paul Kyberd
 Yoshiharu Mori

You are invited

IPPP/NuSTEC topical meeting on neutrino-nucleus scattering

<http://conference.ippp.dur.ac.uk/event/583/>

18-20 April 2017

Europe/London timezone

IPPP Durham

Search

Overview

Timetable

Contribution List

Accommodation

Travel Information

Support

 I.a.wilkinson@durham.ac.uk

Neutrino-nucleus scattering is a critical input to present and future neutrino experiments. Uncertainties related to νA cross sections make a substantial contribution to the systematic-error budgets of, for example, T2K and NOvA, while hadronisation uncertainties need to be addressed in sterile-neutrino search experiments such as MicroBooNE.

The future sensitivity of DUNE and Hyper-K will be no less sensitive to our understanding of νA scattering. The statistical weight of the data sets collected by each of these experiments will be such that uncertainties on the cross-section themselves and the uncertainty on the $\nu_e A$ to $\nu_\mu A$ cross-section ratio must be reduced to the percent level. Such precise knowledge is required not only to manage the overall systematic uncertainty but also to avoid biases in the oscillation parameters extracted from the data. Evidence for CP-invariance violation (CPV) will be sought by measuring the rate of ν_e appearance in a ν_μ beam. Therefore, a lack of understanding of $\nu_e A$ scattering will be a pernicious source of bias or uncertainty in the interpretation of any evidence for CPV.

The measurement, theoretical understanding and phenomenological description of νA scattering are each challenging. To understand νA scattering in sufficient detail for the future neutrino-physics programme to reach its full potential will require the effective collaboration of experimenters, theorists and phenomenologists. Indeed, in the energy range of interest, the combined expertise of nuclear and particle theorists and phenomenologists will be required. Such a collaboration is also likely to generate new insights into long-range QCD and nuclear phenomena.

The goals of the workshop will be to:

- Take stock of the current status of νA scattering data, the nuclear and particle theory through which it is understood and the phenomenological description of the cross sections and hadronic final states;
- Discuss the programme of measurement, theory and phenomenology required to develop an understanding commensurate with the future neutrino-physics programme; and to
- Evaluate the path towards "global fits" that can be used to make reliable predictions of neutrino-nucleus scattering.

The workshop will be organised jointly by the IPPP and NuSTEC and will include discussion, and appropriate development, of the NuSTEC white paper on neutrino scattering. The desired output of the workshop is a short document in which the status of the field is briefly reviewed and the way forward — experimental, theoretical and phenomenological — is outlined.

Future meetings

- Collaboration meetings:
 - 2017:
 - CM48 June/July 2017
 - Belgrade, exact dates to be confirmed
 - CM49 2nd to 4th October 2017 (RAL)
- Next Video Conferences:
 - 06Apr17
 - 04May17