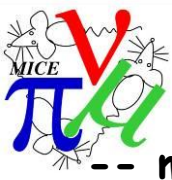


**CM 33 wrap-up**

**TOWARDS CM34**



## General view : **MICE is progressing well on all fronts**

- milestones tracking across the project
- spectrometer solenoid being trained in spite of LHe shortage
- FC magnet coming along
  - but neither FC not SS can be taken for granted yet!
- R9 ready to welcome hardware for assembly
- diffuser is beautiful - **but « quench test » probably not feasible (TBC)**
- LH2 system #1 is ready for testing
  
- RF group has convener (and WBS level 2 manager.. )
- RF layout, power station, ordering of hardware at Mississippi
- RF cavities and RFCC module well along + couplers etc... **(avoid complete stop!)**
- RF single cavity test advancing (how close is it from the MICE system test?)
  
- Coupling coil impressive progress towards 1st coil test at Fermilab
- Coupling coil production chain - collecting information, clarification is close
  - some major decisions made (production of cryostat parts at LBNL)
  
- progress in analysis (KL, TOF, CKOV) and towards MICE paper #2
- data taking sessions are succesful (PID, tracker station test)
  - next is in February 2013
- decay solenoid Quench protection and power supply plan → by Xmas.
- overall MICE timing is making progress
- online/operations group is very effective.
  - however EPICS spill record in DAQ seems still missing**



Area cleared and Yellow line for 5 Gauss limit..



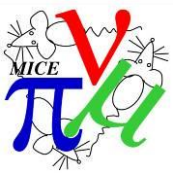
Scaffolding



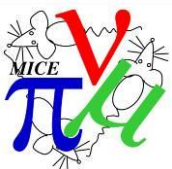
Chiller for cryocoolers



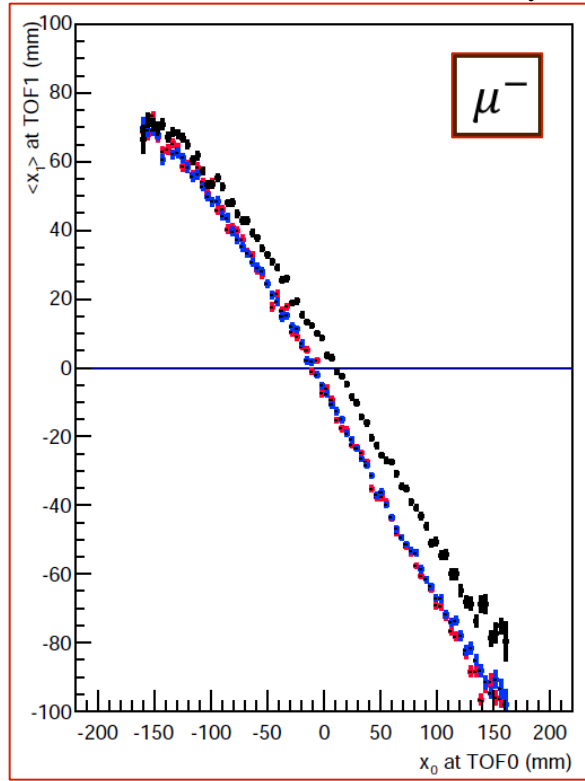
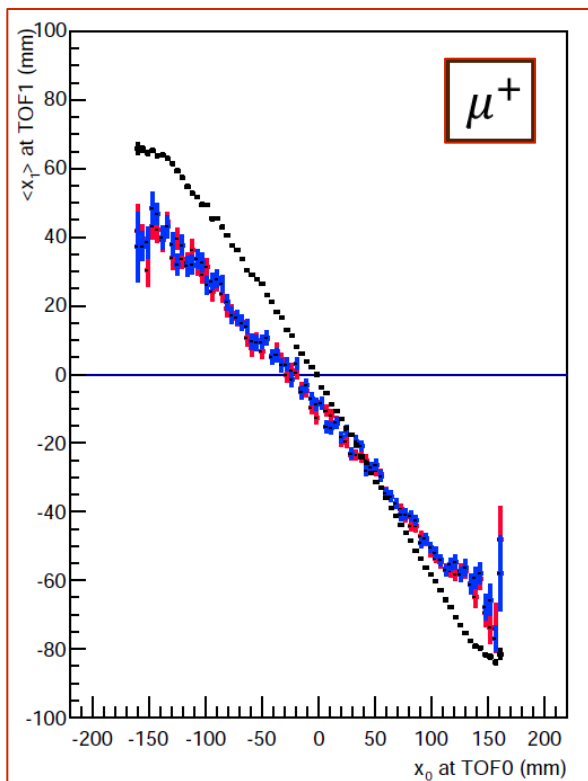
CERN Field Measurement equipment



## minor and MAJOR Hurdles



# correlation between $x@TOF0$ and $x@TOF1$ (test of beamline Q4-Q9 optics)

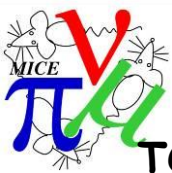


black = data  
red = MC truth  
blue = MC reconstructed  
as data

**MORALE:** we dont know wtf was simulated ☹

→ need to treat and document MC runs with same care as real data

we can completely loose MICE precision due to lack of traceability of data sets  
simulation documentation must be on data set itself (and on data base)

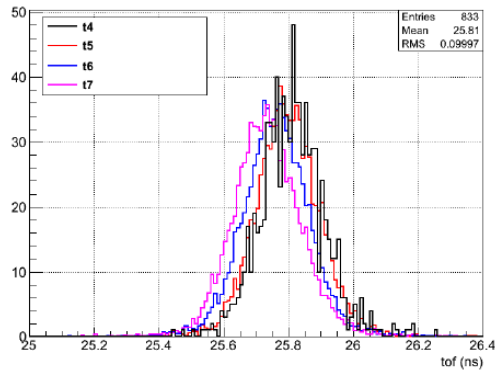


# TOF rate effect (Durga, Yordan)

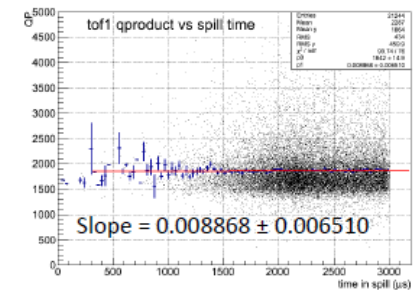
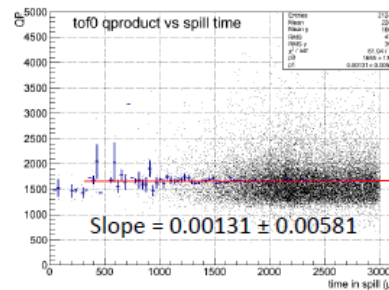
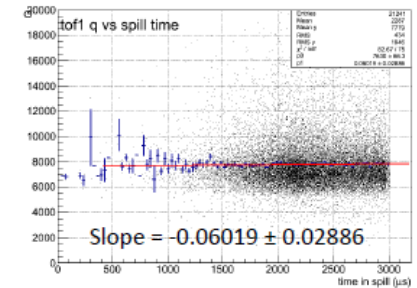
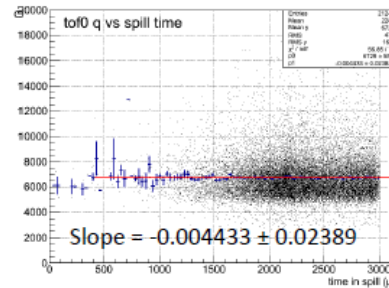
- rate effect very well established
- surprise: the pulse height does not seem to change (droop) with rate
- more investigation going on.

- where are we going with this?
- understand and implement fix

- ToF for various slices of the time within the spill



- Charge & charge product practically flat across the spill. [ Had shown last time that q & qp don't show any dependence on #hits either ]



DR, A/M, 6/21/12

**MAURIZIO AGREES THIS IS SERIOUS AND WILL INVESTIGATE HARDWARE**



## A MAJOR HURDLE:

We have been waiting for **magnets** for a long time...

-- but now we will have **magnetic fields!**

### Magnet Group

Vicky Bayliss

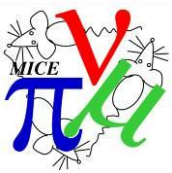
Victoria Blackmore

John Cobb

Mike Courthold

Roy Preece

Mike Zisman



## Magnet Group Tasks since CM32

### Finding solutions for Step IV

- 15 compressors

- Magnet control Rack

- Electrical racks on the North Mezzanine extension

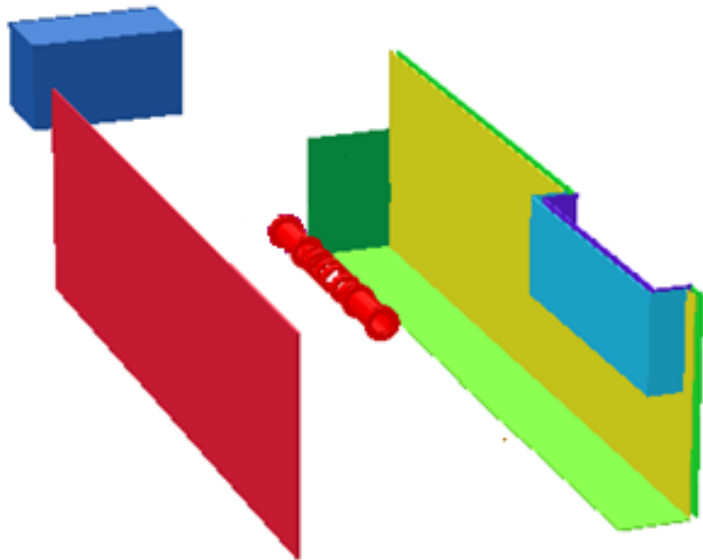
### Considering solutions for Step VI

Understand the full extent of the shielding issues, by:

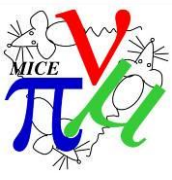
- Gathering information on ferrous objects, or objects which may not operate in high fields



## Step IV: Electrical Racks on North Mezzanine

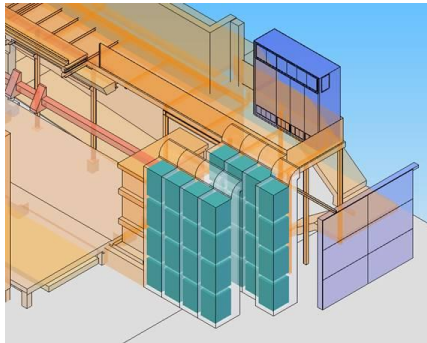


- 4 racks located on the north mezzanine
- 5mm US1010 iron and 5mm mu-metal if Aluminium racks are used.
- Estimated weight 3-5 tonnes - requires major modifications to the north mezzanine



# Step VI Solutions

Modelling shows that it is not reasonably possible to shield the compressors or electrical racks in their currently proposed locations.

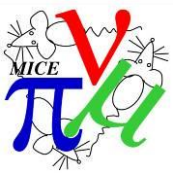


We need to consider:

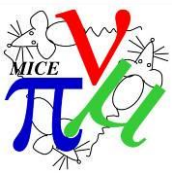
- Compressors moved behind the beam stop, **which would still require shielding**, or against the west wall
- Electrical racks...???
- **What else?**



- This is serious. Magnet group has a big problem in their hands!
- Make sure we have a solution for STEPIV in due time
  - but also make sure we dont paint ourselves in a corner wrt step VI!
  - individual shielding for one item may make things worse for the next item
  - more global solution is necessary
- calling all MICE tohelp:
- book-keeping of items in the hall is essential
  - subsystem owners should provide information
  - Magnet group will be chasing you... PLEASE ANSWER SWIFTLY.
  - Yordan (MOM in July) agreed to chase inventory of magnetic sensitive objects.
- Help with number crunching (software group)
- issue will be followed up regularly.



## TOWARDS CM 34



Next boards :

**MPB 31 October 2012 and FAC 15 November 2012**

- monitor how well we are doing in assembling step IV !
- should deliver a 'realistic schedule scenario' for the step VI
  - assignment of Coupling Coil integration task should be resolved
  - fully loaded schedule for step VI should be underway
- should have paper II (emittance measurement) ready or published (Victoria has kindly agreed to see after it)
- **have to answer questions about operational aspect of increased complexity of apparatus !**

**N.B. next MICE CM34 at RAL 17-19 October 2012**



**VC dates for 2012:**

**19 July**

**23 August**

**20 September**

**CM34 - 17-19 Oct - RAL**

**15 November**

**13 December**

**Linda**



## (expected) Highlights of CM34

### TOWARDS STEPIV:

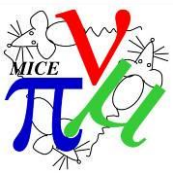
- LH2 test completed
- SS11 in the hall and SS2 in training
- AFC working and measured
- magnetic field protection scheme advanced or solved
- We must converge on how to run the experiment.
  - magnets, LH2,
  - Champions, MOMs and shifters
  - need a minimal number of people who will be at MICE (i.e. STFC-RAL, Chilton Didcot UK) either as long term visitors or locals.
  - champions decide which online tools they need → discuss with C. Rogers
- progress on software, DAQ, Controls
- progress on EMR

### TOWARDS PUBLICATIONS

- Emittance paper full draft circulated
- PID paper results/contents final
- step IV apparatus paper

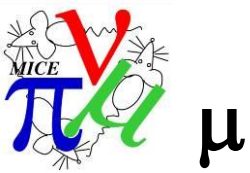
### TOWARDS STEPVI

- scenario for STEP VI defined and loaded schedule underway
- test of Coupling Coil 1 underway
- progress in planning RF construction and testing - system test, MIUCOOL test
- magnetics!



## MICE SCHEDULE





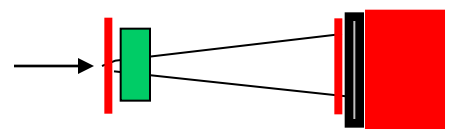
**\*\*\*DRAFT\*\*\* MICE SCHEDULE  
update June 2012**

Run date:

COMPLETED

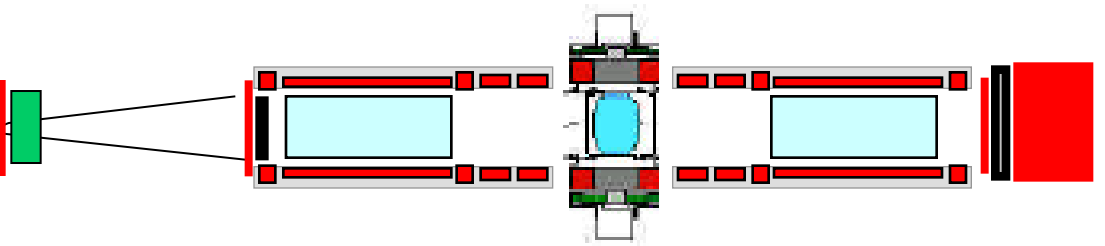
EMR run Feb 2013

**STEP I**



**STEP IV**

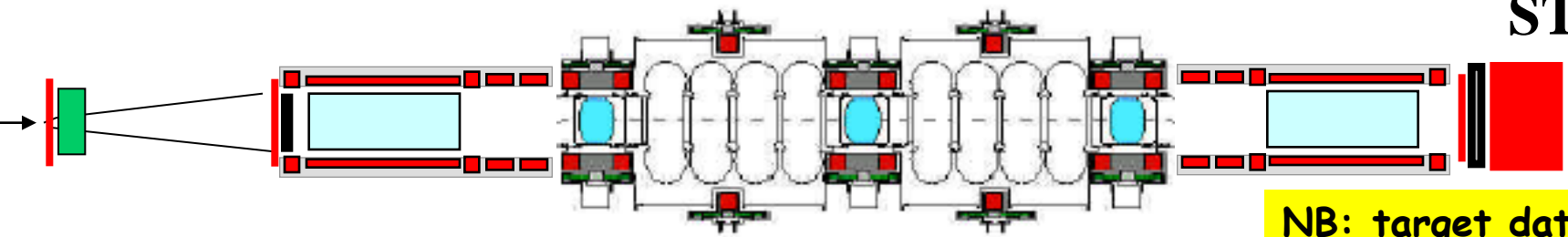
Q2 2013  
till  
Q2 2014

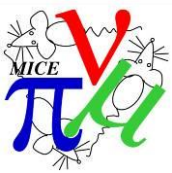


Under construction:

**STEP VI**

NB: target date 2016





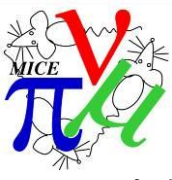
**THANKS !**

**All MICE for hard work and presentations  
we are moving forward and getting there....**

**All who were'nt here but working hard to get the experiment done:**

**at RAL (Stuart Greenall, + {Andy Nichols, Ken Long, part time} )  
at LBNL (Steve Virostek, Derun Li et al)**

**and elsewhere!**



THANKS !

John Cobb for organizing the scientific agenda

Paul Soler and the Glasgow team for super environment and experience ..

-- now we understand why scotts like whiskey

Valerie Flood - secretary and general organiser of everything

Ryan Bayes - website

Andrew Pickford - IT support

Mark Kille - room arrangements

