

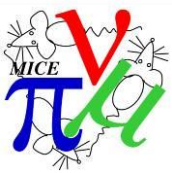


WELCOME TO MICE CM31!

- Goals and Status -

Many thanks to Don Summers, Lucien Cremaldi, David Sanders for hosting us

And to Dan Kaplan for preparing the agenda



Many news in neutrino physics over the last 6 Months!

1. Indications (2.5 and 1.7 sigma) of θ_{13} being non-zero, and probably large
2. « Neutrino » is now known by everybody...
(but very unlikely to go faster than speed of light!)

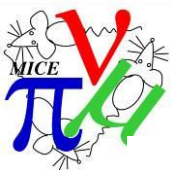
Many versions of Neutrino Factory with muons match incremental program

- if θ_{13} is very large: mini neutrino factory to measure cross-sections
(store muons right out of prod. Target)
- for intermediate values a Lower energy Neutrino factory
(still need the intensity!)

Neutrino Factory remains most precise and only device able to test oscillations very precisely

- precision measurements of angles and mass differences,
- tau appearance and unitarity tests
- detailed study of matter effects
- etc...

→ Physics is moving forward,
no time to waste, **Ionization cooling must be demonstrated**



MICE SCHEDULE -- update July 2011

Run date:

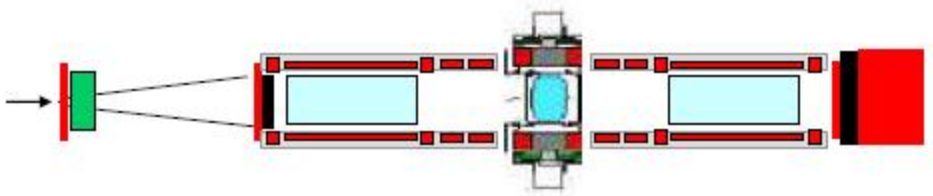


μ

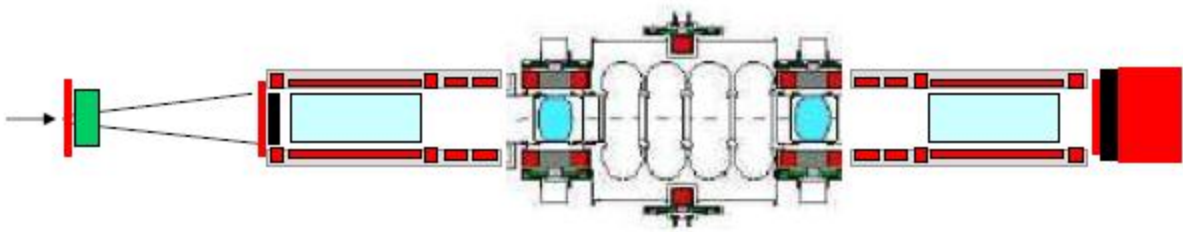


STEP I

completed -> Aug2010
EMR run Q1 2012

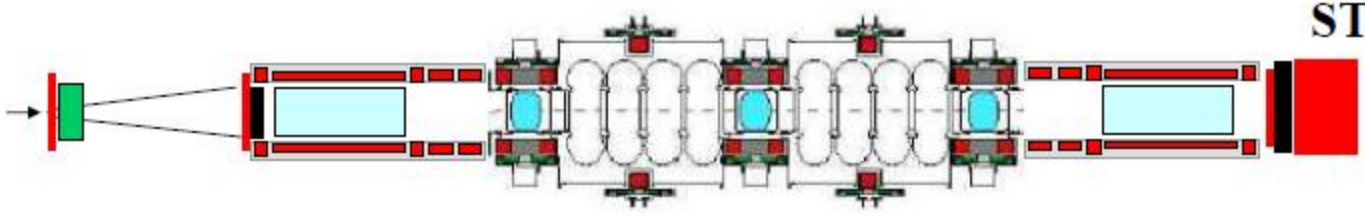


STEP IV Q3 2012



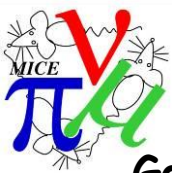
STEP V

Q2 2014 *)



STEP VI

*) target date, necessary to run step V before long ISIS shut-down Aug.2014-Feb.2015



Goals of the meeting

1. Review activities and progress of MICE

- Operations (MOM, new Target, magnetic measurements)
 - construction (MICE hall, LH2, Spectrometer Solenoids, Focus Coils, Coupling coils, RF, EMR...)
 - publications (Status of pur papers!)
 - understanding of the physics of the experiment (Analysis session)
 - Software development (just out of workshop!)
- LOOKING FORWARD TO HEAR THE NEWS!**

2. Planning for data taking

Are we ready?

- December 2011 run
 - restart everything - « step I »
 - TOF calibration (new tubes)
 - Cherenkov dedicated run
- March 2012 run: EMR
- October 2012 start Step IV

3. Planning for completion of MICE

- coupling coils, RFCC modules, RF power

4. Where are we standing w.r.t. goals voiced at CM30?



By Next Meeting (1)



- Two MICE papers accepted for publication
- Initial results from summer runs
- EMR production issues resolved and production in full swing
- Preparations to choose Step 4 physics goals under way
 - finalize choices at CM31



By Next Meeting (2)



- Continue to work toward adopted goal of trying for Step 5 running before long ISIS shutdown
 - as fallback, assess scientific ramifications of going straight to step 6
- Take delivery of first AFC module and first CC cold mass
- Develop measurement plans:
 - RF cavity
 - CC cold mass
 - and review both
- Flesh out fabrication and assembly plans for RFCC module:
 - CC cryostat (who, where, when)
 - order conductor for remaining magnets



By Next Meeting (3)



- Magnetic measurement *strategy* needs to be settled before meeting
 - not how, but when and where
- Get MAUS on-line reconstruction software operational
 - TOF code integrated
 - event display available
- Make NTUPLES available to shifters?
 - are only the accelerator physicists trustworthy enough?
- Each group should list a few items in this “by next meeting” category in its future presentations
 - Chris Rogers did this yesterday

Cycle no.	Start	Finish	Days				
	Monday 8-Aug-11	Sunday 18-Sep-11	42	106.9			Shutdown (incl. TS-1 moderator change) [Summer Bank H. 29-Aug]
	Monday 19-Sep-11	Sunday 2-Oct-11	14				Run-up + machine physics
	Monday 3-Oct-11	Monday 3-Oct-11	1				Beam line permits
2011/03	Tuesday 4-Oct-11	Thursday 3-Nov-11	30	30.6	91.9		Cycle 2011/03
	Friday 4-Nov-11	Sunday 6-Nov-11	3				Machine physics
	Monday 7-Nov-11	Sunday 13-Nov-11	7				Short shutdown
	Monday 14-Nov-11	Sunday 20-Nov-11	7				Run-up + machine physics
	Monday 21-Nov-11	Monday 21-Nov-11	1				Beam line permits
2011/04	Tuesday 22-Nov-11	Thursday 22-Dec-11	30	30.6	122.5		Cycle 2011/04
	Friday 23-Dec-11	Friday 23-Dec-11	1				Machine physics
	Saturday 24-Dec-11	Sunday 5-Feb-12	44				Shutdown
	Monday 6-Feb-12	Sunday 19-Feb-12	14				Run-up + machine physics
	Monday 20-Feb-12	Monday 20-Feb-12	1				Beam line permits
2011/05	Tuesday 21-Feb-12	Thursday 29-Mar-12	37	37.6	160.1		Cycle 2011/05 — provisional
	Friday 30-Mar-12	Sunday 1-Apr-12	3				Machine physics
	Monday 2-Apr-12	Sunday 29-Apr-12	28	98.9			Shutdown (incl. TS-1 moderator change) [Easter 06-09-Apr]
	Monday 30-Apr-12	Sunday 13-May-12	14				Run-up + machine physics [May Bank H. 07-May]
	Monday 14-May-12	Monday 14-May-12	1				Beam line permits
2012/01	Tuesday 15-May-12	Thursday 14-Jun-12	30	30.6	30.6		Cycle 2012/01 [Spring Bank H. 28-May] — very provisional
	Friday 15-Jun-12	Sunday 17-Jun-12	3				Machine physics
	Monday 18-Jun-12	Sunday 1-Jul-12	14				Shutdown
	Monday 2-Jul-12	Sunday 8-Jul-12	7				Run-up + machine physics
	Monday 9-Jul-12	Monday 9-Jul-12	1				Beam line permits
2012/02	Tuesday 10-Jul-12	Thursday 9-Aug-12	30	30.6	61.3		Cycle 2012/02 — very provisional
	Friday 10-Aug-12	Sunday 12-Aug-12	3				Machine physics
	Monday 13-Aug-12	Sunday 16-Sep-12	35				Shutdown [Summer Bank. H. 27-Aug]



ISIS running

Typical year consists of 5 ISIS 'user runs' of ~35 days each + run-ups, MP.

	lundi	20.févr.12	lundi	20.févr.12	1			Beam line permits
2011/05	mardi	21.févr.12	jeudi	29.mars.12	37	37.6	160.1	Cycle 2011/05 — provisional
	vendredi	30.mars.12	dimanche	01.avr.12	3			Machine physics
	lundi	02.avr.12	dimanche	29.avr.12	28	98.9		Shutdown (incl. TS-1 moderator change) [Easter 06–09-Apr]
	lundi	30.avr.12	dimanche	13.mai.12	14			Run-up + machine physics [May Bank H. 07-May]
	lundi	14.mai.12	lundi	14.mai.12	1			Beam line permits
2012/01	mardi	15.mai.12	jeudi	14.juin.12	30	30.6	30.6	Cycle 2012/01 [Spring Bank H. 28-May] — very provisional
	vendredi	15.juin.12	dimanche	17.juin.12	3			Machine physics
	lundi	18.juin.12	dimanche	01.juil.12	14			Shutdown
	lundi	02.juil.12	dimanche	08.juil.12	7			Run-up + machine physics
	lundi	09.juil.12	lundi	09.juil.12	1			Beam line permits
2012/02	mardi	10.juil.12	jeudi	09.août.12	30	30.6	61.3	Cycle 2012/02 — very provisional
	vendredi	10.août.12	dimanche	12.août.12	3			Machine physics
	lundi	13.août.12	dimanche	16.sept.12	35			Shutdown [Summer Bank. H. 27-Aug]
	lundi	17.sept.12	dimanche	30.sept.12	14			Run-up + machine physics
	lundi	01.oct.12	lundi	01.oct.12	1			Beam line permits
2012/03	mardi	02.oct.12	jeudi	01.nov.12	30	30.6	91.9	Cycle 2012/03 — very provisional
	vendredi	02.nov.12	dimanche	04.nov.12	3			Machine physics
	lundi	05.nov.12	dimanche	11.nov.12	7			Short shutdown
	lundi	12.nov.12	dimanche	18.nov.12	7			Run-up (one week per month off)
	lundi	19.nov.12	lundi	19.nov.12	1			Beam line permits
2012/04	mardi	20.nov.12	jeudi	20.déc.12	30	30.6	122.5	Cycle 2012/04 — very provisional
	vendredi	21.déc.12	dimanche	23.déc.12	3			Machine physics
	lundi	24.déc.12	dimanche	03.févr.13	42	122.5		Shutdown (incl. TS-1 moderator change)
	lundi	04.févr.13	dimanche	17.févr.13	14			Run-up + machine physics
	lundi	18.févr.13	lundi	18.févr.13	1			Beam line permits
2012/05	mardi	19.févr.13	jeudi	21.mars.13	30	30.6	153.1	Cycle 2012/05 — very provisional
	vendredi	22.mars.13	dimanche	24.mars.13	3			Machine physics
	lundi	25.mars.13	dimanche	28.avr.13	35			Shutdown (incl. TS-1 moderator change) [Easter 29-Mar–01-Apr]
			Checks:	1127	1114			

new target,
full EMR

no running

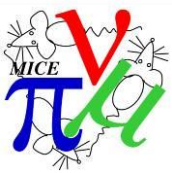
Step IV
Installation

Step IV:
empty/LH2/(LHe)

no absorber
flat LiH

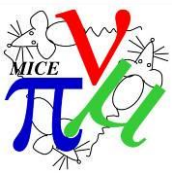
LiH wedge
+ reserve

5 periods April 2013 to April 2014 → priority to Step V installation
Some additional step IV running not ruled out but lower priority
Next Long Shut Down envisaged: Aug. 2014 to February 2015



DATES

- 0. MICE VC's next is 17 November then monthly (see MICE web site)**
- 1. Analysis meetings restart; 10 November**
MANY THANKS TO JOHN COBB for great job!
thanks for numerous answers!
Please see me to prepare the agenda
then every two weeks
- 2. December 2011 run**
- 3. Next collaboration meeting 8-11 February 2012**
we must conclude with a construction plan for Step V (CC)
- 4. Next MICE Project Board 8 March 2012**
- 5. Next MICE Funding Agency Committee 19 March 2012**



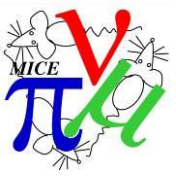
Some recommendations by MPB in July 2011:

Recommendations

(MICE is asked to report at the next MPB meeting 8 March 2012 on these)

- Engage Chinese manufacturing partners during CC magnet testing and cryostat construction in the US
- Monitor 2011 Milestones and report to the next project board on their follow up and achievement
- Encourage project to evaluate more thoroughly step IV running
- Continue to recommend priority to be given to RF cavity tests well before commissioning step V to reduce project risks
- Recommend early soak test of RF power sources
- Recommend incorporating enough instrumentation to minimize occurrence and consequences of system-wide quench

NB we don't have to do everything they say, but we have to take it seriously and report on it.



LET'S HEAR THE NEWS!