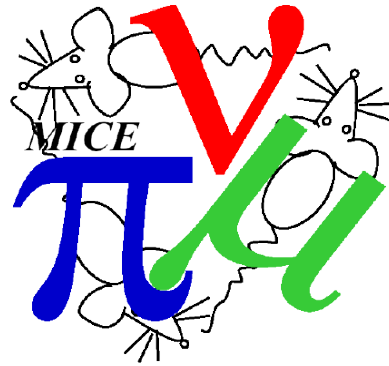




# MOM Report

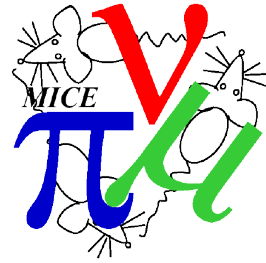
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C. Rogers

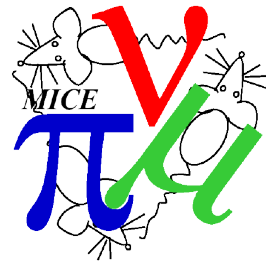


# MOM Report



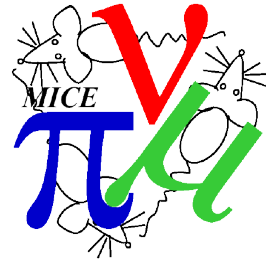
- New MOM rota started 7<sup>th</sup> January
- Chris R: MOM 7<sup>th</sup> January – 4<sup>th</sup> February
  - Mock data run
  - Preparation for shifter training
- Pierrick: MOM 4<sup>th</sup> February – 4<sup>th</sup> March
  - Mock data run 2?
  - Preparation for “activation” run (8<sup>th</sup> March)
  - Preparation for “detector shakedown” run (21<sup>st</sup> March)

# Shifter Training



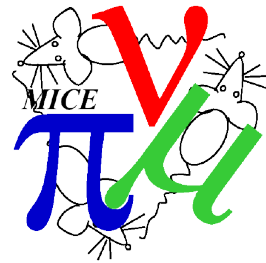
- Shifter training has been organised for 12<sup>th</sup>, 13<sup>th</sup> February
  - Trainees who require RAL induction should have attended the RAL course on 9<sup>th</sup> February
- Trainees and trainers have all been notified

# Mock Data Run



- Aim to test as much of the MICE systems as possible without beam
  - Detector readout
  - DAQ
  - Controls
  - Online monitoring
  - Online+offline reconstruction
  - Operation of beamline
  - PPS
    - Note we ran in muon beam test mode
- Every subsystem found a problem
  - Many were previously unknown
- Run summary is written up as MICE note 456

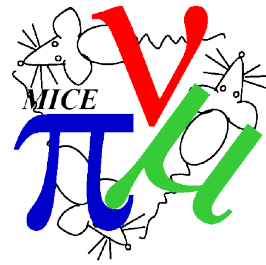
# Run plan



- Plan was to run using a variety of settings and triggers

Name	Target Frame	Proton Absorber	Beam Stop	Diffuser	Q1	Q2	Q3	D1	DS	D2	Q4	Q5	Q6	Q7	Q8	Q9	Trigger	Time
		bitmask		bitmask	A	A	A	A	A	A	A	A	A	A	A	A		mins
Test 1	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	New, TOF1	30
Test 2	Lowered	1111	Closed	1111	184.4	101.2	112.6	387.9	200.0	167.7	295.0	395.6	260.9	197.8	298.4	253.52	New, TOF1	30
Test 3	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	New, TOF0	10
Test 4	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	New, TOF1	10
Test 5	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	New, TOF1, internal tracker LED pulsers	10
Test 6	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	New, TOF1, external tracker LED pulsers	30
Test 7	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	Old, TOF0	30
Test 8	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	Old, TOF1	10
Test 9	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	Old, TOF1, internal tracker LED pulsers	10
Test 10	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	Old, TOF1, external tracker LED pulsers	10

# Run plan

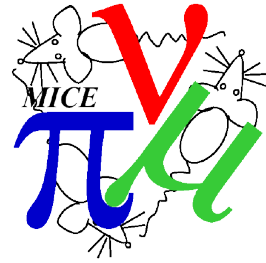


- Plan was to run using a variety of settings and triggers
  - In the end we ran with:

Name	Target Frame	Proton Absorber	Beam Stop	Diffuser	Q1	Q2	Q3	D1	DS	D2	Q4	Q5	Q6	Q7	Q8	Q9	Trigger	Time
		bitmask		bitmask	A	A	A	A	A	A	A	A	A	A	A	A		mins
Test 1	Raised	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	Pulser trigger, no tracker readout	30
Test 2	Raised	1111	Closed	1111	184.4	101.2	112.6	387.9	200.0	167.7	295.0	395.6	260.9	197.8	298.4	253.52		30
Test 3	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	New, TOF0	10
Test 4	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	New, TOF1	10
Test 5	Raised	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	Pulser trigger, tracker readout, no LEDs	
Test 6	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2		New, TOF1, external tracker LED pulsers
Test 7	Lowered	0000	Closed	0000	102.4	127.9	89	323.2	669	94.2	158.1	212	140.6	138.7	209.8	179.2	Old, TOF0	30
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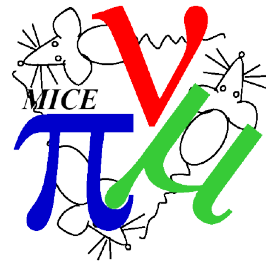
- We didn't take a cosmic trigger
  - Would have been nice to see e.g. cosmic hits
- We didn't fire the tracker LEDs
- We didn't run the target in ISIS

# Data Taking



- Started at 9:00 am
  - Some were in from 8:30
- Beamline operational by 11:00
- DAQ reading out in pulser mode and online monitoring visible by 13:00
  - No online recon for the whole day due to data unpacking issue
- Tracker was readout by 17:00
- Closed up by 19:00

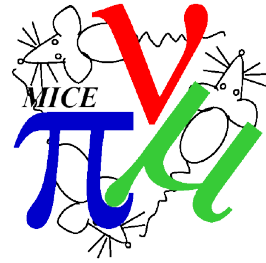
# Beamline Issues



- Some minor issues with the PPS
- Some issues with target
  - Reported that the target stepper motor was driving onto the limits

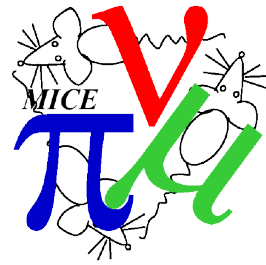


# Detector Issues



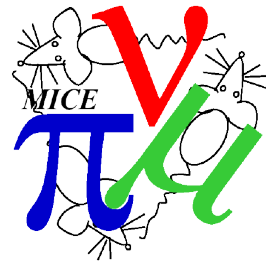
- Luminosity monitor was not powered
- Sys High Voltage power supply - issue with spares
- Tracker needs to be completed (waveguides)
- Some issue with tracker temperature
- Some issue with tracker spares
- Tracker was not light tight (dark check)
- Tracker LED systems should be made operational
- Issue with grounding in the hall - noise in tracker
- Some issues with EMR readout

# DAQ Issues



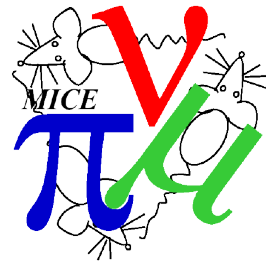
- Need to make sure that controls → DAQ interface works
- Data unpacking software needs to have a proper release cycle
- Crashes in InfoBrowser need to be sorted out
- DATE-tracker integration code should be cleaned up and validated

# Controls Issues



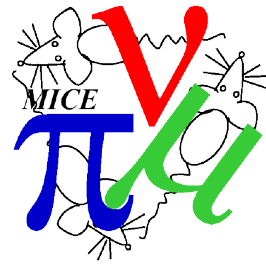
- The alarm handler could not be displayed (or made audible)
- Need to figure out a procedure for loading settings into the run control
- Need to establish remote operation of EMR
- Need to integrate remote operation of the tracker
- Need to make sure that we get ISIS beam loss monitoring back when ISIS comes up
- Need to agree a set of beamline alarm limits, etc
- Implement run control “Test” run type
  - If something is not working, we can still run

# Successes



- We were able to operate the beamline more-or-less okay
- The DAQ worked with some stability issues
- We were able to read out some tracker electronics noise
- We were able to unpack the data from online monitoring and look at plots
- Monday afternoon operations planning meetings were useful
  - Highlight status of systems and any open issues

# Mock data run - Looking Forward



- The run is written up as MICE note 456
- We have made fantastic progress
  - But we can not run in this state
  - In particular tracker is an issue
- 8<sup>th</sup> March run deadline is very tight...
- May perform a mock data run before 8<sup>th</sup> March
- Pierrick is current MOM
  - Wish him the best of luck