

# MICE Operations

- ▶ Operations since CM38
- ▶ Plans over shutdown

# Since CM38

▶ Running has focussed on proving to ISIS that we can run the target at double dip rate.

April 6<sup>th</sup> : Tune target insertion to ensure that we don't scrape the ISIS beam during double dipping.  
Test of the new trigger system

June 23rd : Short run to test ISIS beam loss monitoring systems

June 29th : 18 hour activation run  
TOF1 Calibration  
CKOV HV and momentum threshold scan

# April 6<sup>th</sup> - Run Goals

25/06/2014

Target Mechanism

3

So the target on ISIS was run at double rate on Sunday 6th April

Goals:

Demonstrate that the Target can run at a higher dip rate, without:

Scraping the beam early on out pulse.

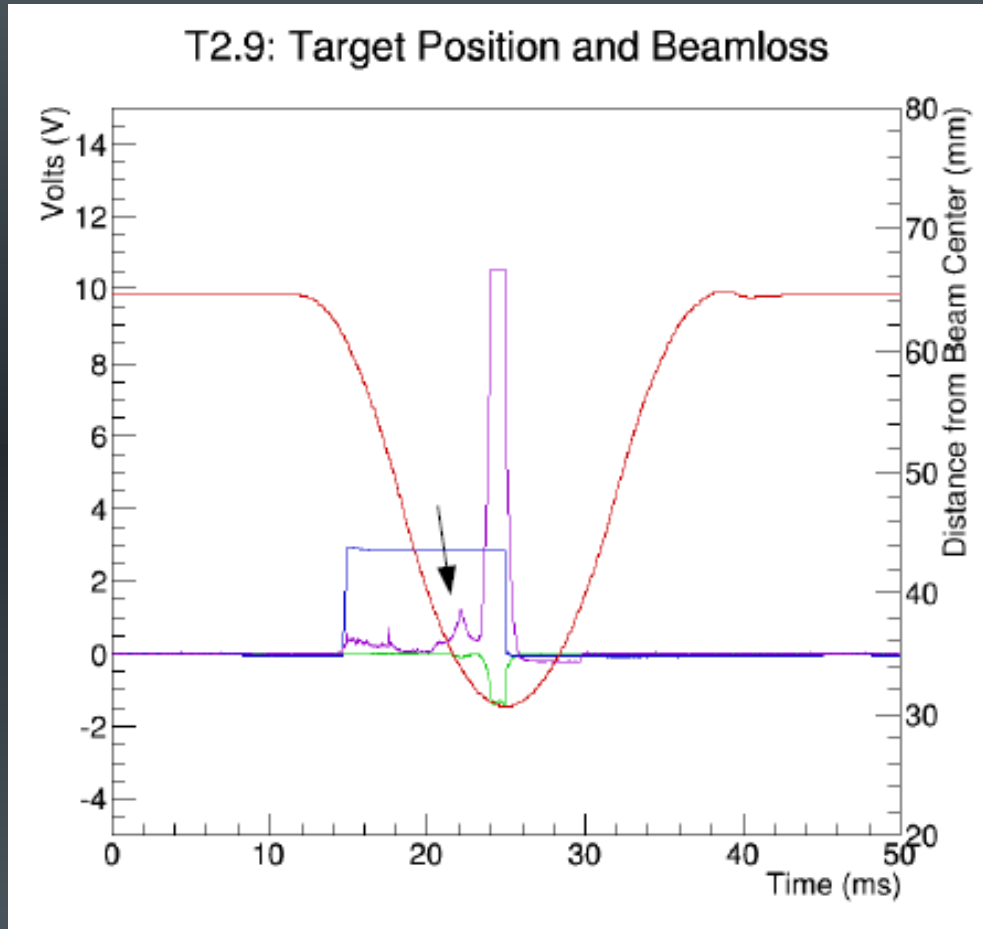
Causing additional loss on the next injection.

Make any necessary changes to the beam bump

Test the DAQ could operate at the 0.78Hz rate.

Note that the DS was not available so the data rate was reduced...

# Trajectory Plot



We found these settings gave us an average of 4Vms beam loss on the monitor screen:

Delay: 11.60ms

Depth: 31.55mm

The green trace is fairly flat topped, indicating we have a steady particle rate during the final ~2ms of the ISIS spill. The purple trace is a flat top for the wrong reasons – its clipping!

We observed a small amount of scraping on the way down, as indicated by the arrow.

Conclusion : ISIS is satisfied that the double rate dip doesn't interfere with the beam

June 23rd

- ▶ A discrepancy between the network beam loss display and the wall monitor has been observed.
- ▶ 3 hour run on June 23<sup>rd</sup> to allow ISIS to track down the problem
- ▶ Replaced a readout card for BLM 8.1. All BLM values seem to be consistent now.

June 29th



Activation run to check effect of double dipping around the target region

08:00 – 08:30	Beam off
08:30 – 09:00	Health physics survey of SP7 and MICE Beamline
09:00 – 09:30	ISIS set up and restart beam
09:30 – 00:00	4V double rate MICE run
00:00 – 08:30	Beam off
08:30 – 09:00	Health physics survey of SP7 and MICE Beamline

Also plan : A TOF calibration  
CKOV HV Scan  
CKOV momentum threshold scale  
Final test of new trigger system

# MOM Rotation to July



From	To	MOM
March 31st	April 13th	Adam Dobbs
April 14 <sup>th</sup>	April 27th	Ray Gamet
April 28th	May 11th	Adam Dobbs
May 12th	May 25th	Melissa Uchida
May 26th	June 8th	Ryan Bayes
June 9th	June 23rd	Paul Soler
June 24th	July 6th	Ryan Bayes

Thanks to all the MOMs.

# MOM to January

- ▶ With ISIS shut down until 2015 and construction/installation work going on in the Hall, the lead responsible person is the Hall Manager
- ▶ There is a proposal to suspend the role of the MOM (which is essentially there to provide scientific oversight) until January 2015. ISIS has been queried and are in agreement as long as someone carries out the daily checks and can liaise with ISIS.
- ▶ Current model is to have 2 MOMs per User run (6 week MOM shifts)



# MOM Sign-up

THE UNIVERSITY OF  
**WARWICK**

(Not official schedule for '15)

Run 1 : March/April

Run 2 : June/July

Run 3 : September/October

Run 4 : November/December

If you would like to volunteer please email me. I'll be calling on experienced MOMs as well.



# Shifts

- ▶ Over the shutdown we will put in place the machinery to allow formal shift allocations.
- ▶ Expect more information on shifts around September including requests to institutes to inform us of the number of those who want to sign STEP IV papers around September. The number of shifters will really inform whether we can run 4 or 6 shifts a day.
- ▶ Shift allocation should begin around November

# Summary

- ▶ Double dip target running has been tested and seems to be feasible.
- ▶ The commissioning plan is the next step (see talks by Jaroslaw and Paul Soler)
- ▶ Shift allocation will be available around Oct/Nov
- ▶ Think about when you are available next year and volunteer to be MOM! You will receive great riches\*

# Motivation

## 1) Motivation: ISIS

At 4V of beam loss at the MICE target we are creating  $\sim 10$  V of loss in super period one. This is the max observable voltage before the instrumentation saturates.

## 2) Motivation: Tracker

The dead time issue in the tracker. After a particle hits a detector there is some dead time, this means a second particle coming in after the first and within the dead time cannot be digitised.

By reducing the rate of particles per spill, you increase the mean time between particles, meaning you get more digital muons per Vms beamloss.

# Run Goals

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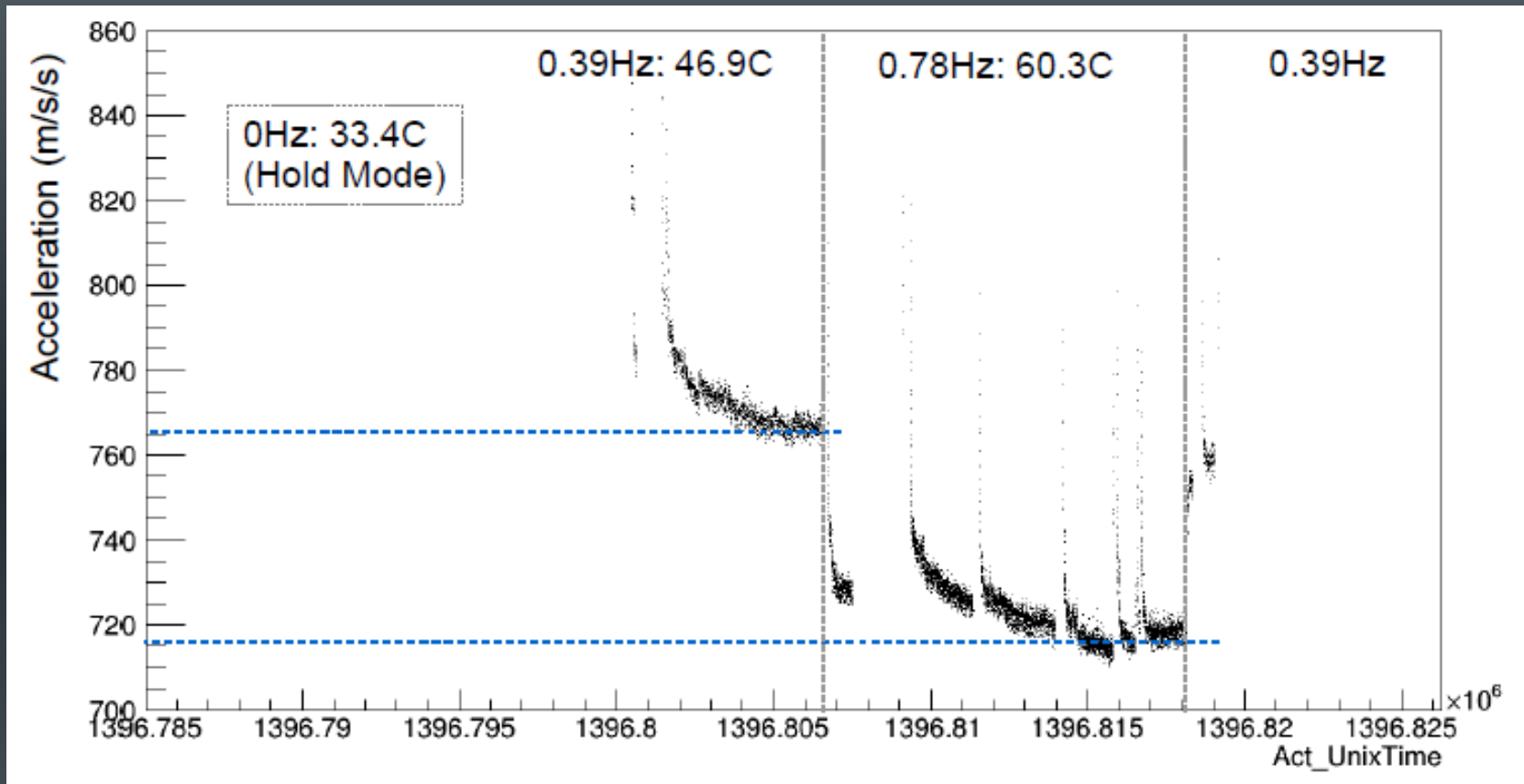
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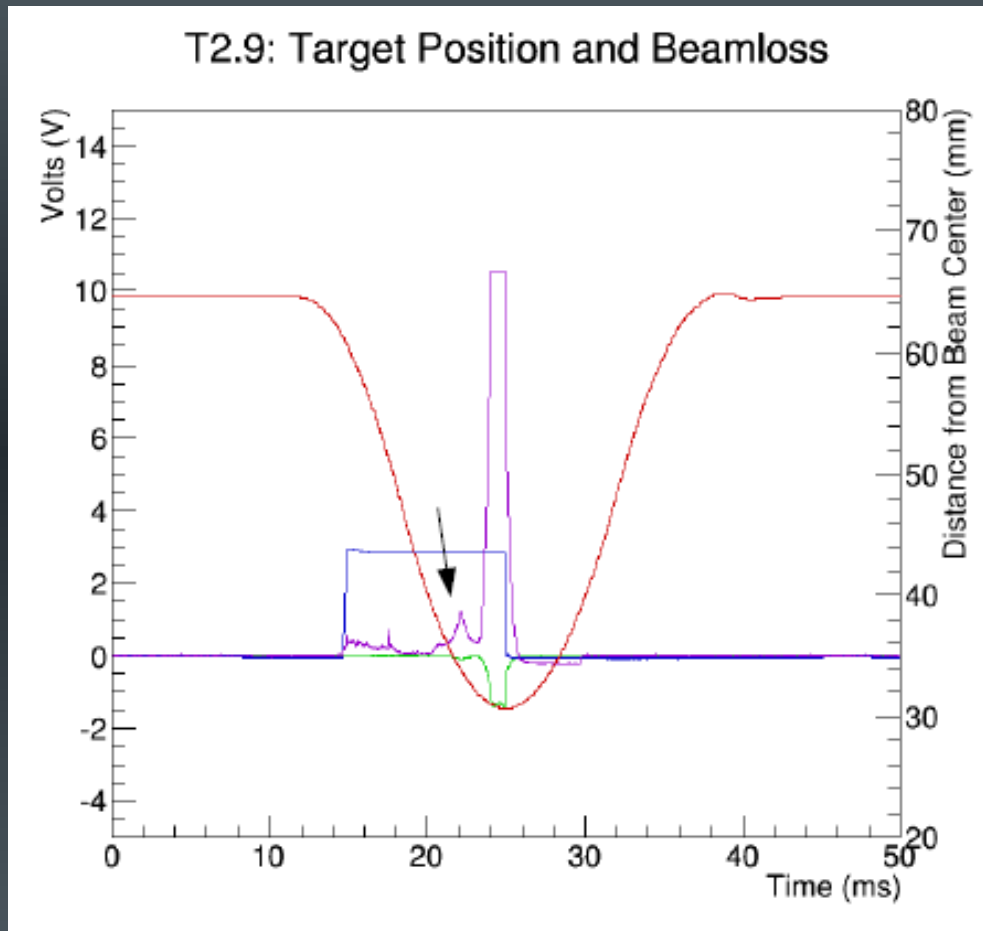
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# Target Acceleration



The increased coil temperature from higher frequency operation reduces the acceleration by about  $40\text{ms}^{-2}$ . This was anticipated.

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# Issues

Henry has flagged a problem with communications MOM-to-MOM and the operation of institutional memory

Issues which were noted during the setup to the April run were not dealt with by the June run.

Consequence of : Too many MOMs in too short a time  
Operational control too lax  
Some procedures not being followed in a timely manner  
Inconsistent communication with Hall Manager

Solutions (?) : Ensure issues are properly flagged to Whiteboard and eLog when they happen or are noticed  
Less MOMs for longer  
Regular Operations forum (necessary in STEPIV)