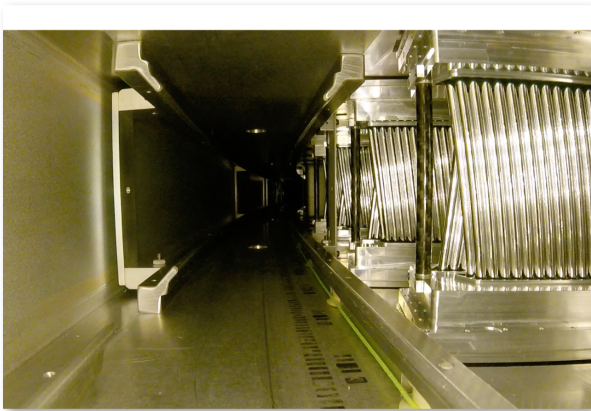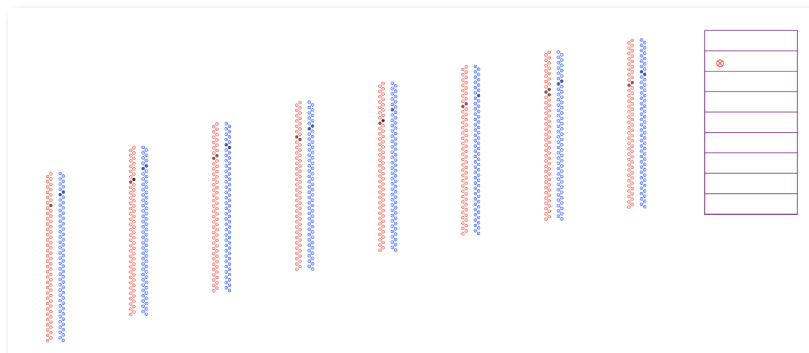# WP1 : g-2 Detectors

Milestone-1 : Tracker DAQ Integration : 01/06/2017 : COMPLETED 10/04/2017
Deliverable 1.2: Report on installation and initial commissioning of g-2 trackers : 01/01/2018 (LIVERPOOL)


g-2 took data from May-31 to July-7
DAQ and detectors performed well.
Had one complete 8 module tracker for this commissioning run
 - recorded approx 2M tracks

The second 8 module tracker will be installed Oct 16-29 and this completes
the DOE deliverable for the tracker and so we are OK for the 01/01/18 deliverable

Some of the spare modules may be installed in the location after
the inflector but need to investigate physics gain vs impact on
Q1 quadrupole and kickers.

WP1 : g-2 Detectors

MUSE
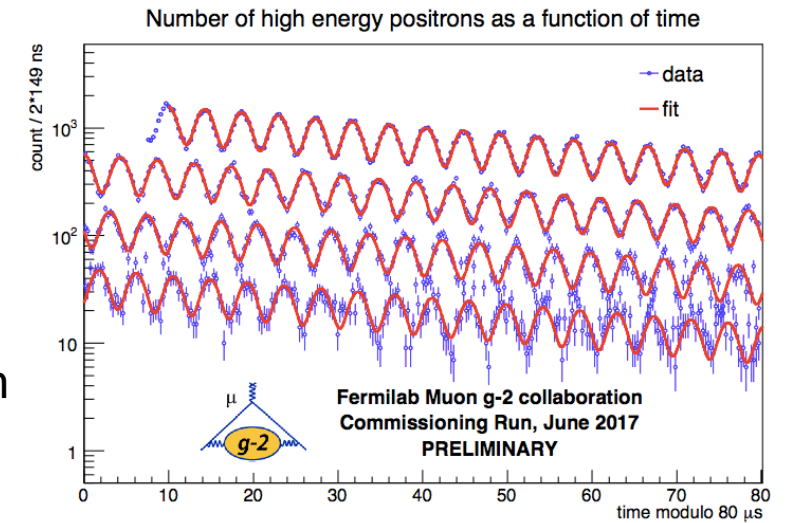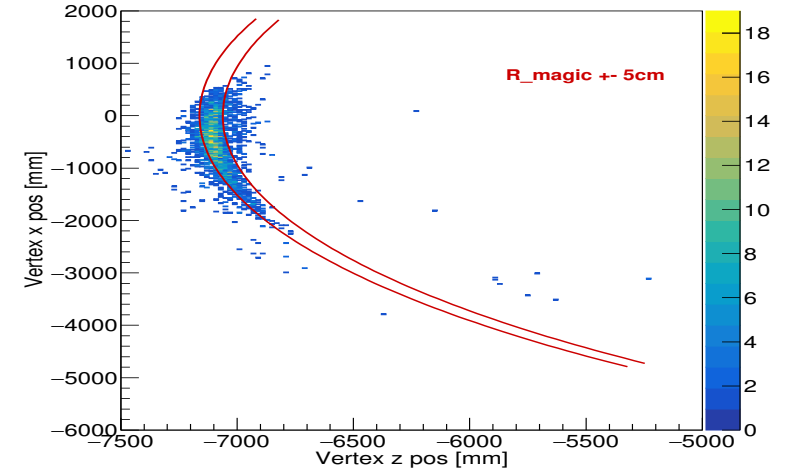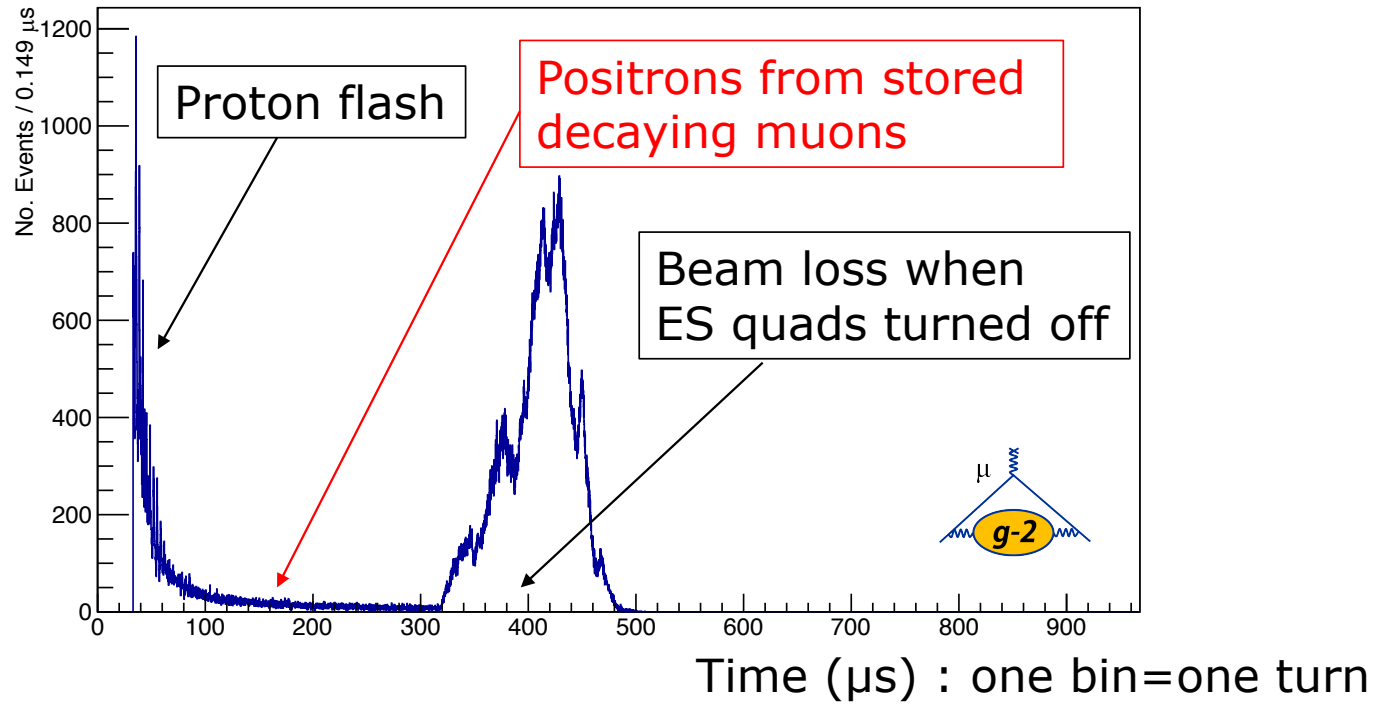
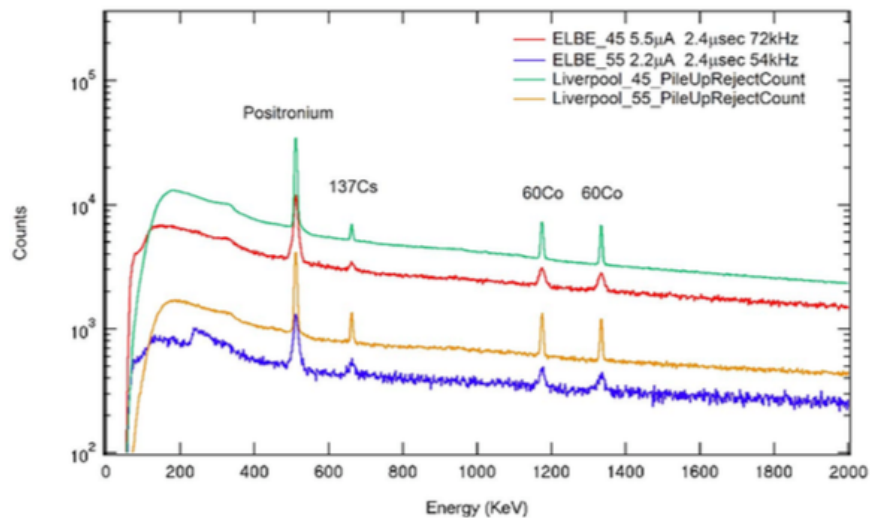

WP2 : Mu2e Detectors

Milestone-3 : Installation of MU2e HPGe detector : 01/01/2020
Deliverable 2.3: Design of Mu2e HPGe detector : 01/04/2018

UK funding from STFC has arrived.

Had a beamtest of a prototype STM at Elbe/HZDR : 25 -180 kHz photons
from 13.5 and 9 MeV electrons on Aug 4-7.

ELBE_45		Liverpool		
Source	Energy (KeV)	Sigma (KeV)	Err_Sigma (KeV)	
Positronium	511	3.36677	0.107921	Before
137Cs	661.62	3.54212	0.0447998	
60Co	1173.23	3.01053	0.0464932	
60Co	1333.51	3.03162	0.0113144	
ELBE_55		Liverpool		
Source	Energy (KeV)	Sigma (KeV)	Err_Sigma (KeV)	
Positronium	511	3.23469	0.131782	After
137Cs	661.62	3.07947	0.10098	Irradiation
60Co	1173.23	3.12654	0.109353	
60Co	1333.51	3.32335	0.0354409	

WP3 : Calibration Tools (g-2)

Deliverable 3.2: Calibration system for g-2 straw tracker (01/07/2017) (REPORT UPLOADED: 04/07/17)

Milestone 5: g-2 calibration system commissioned (01/01/2019)

European Commission

MUSE

H2020 Grant Agreement N° 690835

Deliverable D3.2 – WP3 – Due date: 30 June 2017

Title: g-2 tracker (calibration) tools

Type: Report

Dissemination level: Public

WP number: WP3

Lead Beneficiary: UCL

Abstract:

This report describes the calibration tools that have been developed for the g-2 straw tracker. These comprise of three systems: a vacuum test-stand, a cosmic test-stand and a source test-stand. The data from these test-stands coupled with a GARFIELD simulation have been used to fully characterise the straw trackers that are presently taking their first data from stored muons in the g-2 storage ring at FNAL.

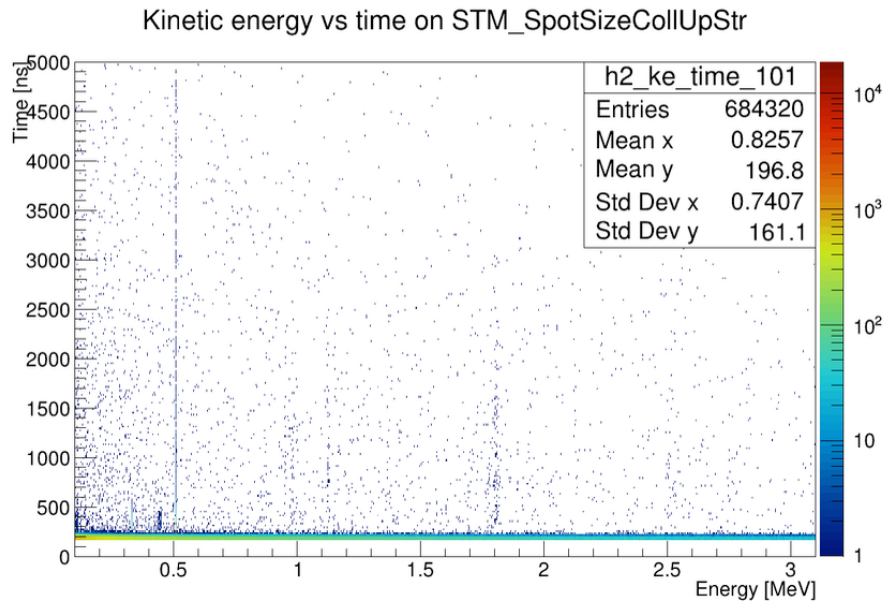Calibration system now being used to characterise the modules for the 2nd tracker station at FNAL

WP4 : Software Tools (g-2)

Milestone-6 : g-2 offline reconstuction code ready for analysis of data : 01/01/2017 (Report uploaded 30/12/16)
Deliverable 4.2: Simulation of 10^{11} muons for g-2 and stress-testing of framework : complete

Milestone-7 : Mu2e HPGe reconstruction code : 01/05/2019

We are starting on this now with the ELBE data and optimising the MWD algorithms.
This is informing the spec for the mTCA TDCs we will be buying shortly.

Kinetic energy vs time on STM_SpotSizeCollUpStr

h2_ke_time_101	
Entries	684320
Mean x	0.8257
Mean y	196.8
Std Dev x	0.7407
Std Dev y	161.1

Photon rates of 159 kHz now in simulation