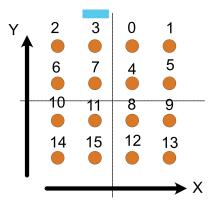
To be followed...

13/09/24

Reminder: Conventions



- X-Y convention derived from the drift chambers
- Propagated to the Xm-Ym variables
- Blue square is the drift chamber blind zone

Fibre position

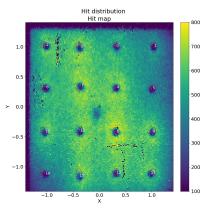
Determining the actual fibre position

- Use the V2 processing (use 2 drift chamber/3)
- Finding the minimum of the mean hit value (blue circle) around an approximate position (red)

Cuts :

eventType hitTot ∑hit[*i*]Cor diffTrack2 muonDZ

 $\begin{array}{l} \mbox{4 (beam event)} \\ \mbox{< 800 and } > 0 \\ \mbox{1 (mean distance to track < 250 μm)} \\ \mbox{>0 (track has been reconstructed)} \end{array}$



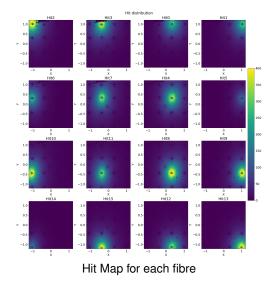
Results (cm) :

Fiber	0	1	2	3	4	5	6	7
X	0.33	1.05	-1.01	-0.36	0.33	1.01	-1.01	-0.34
Y	1.0	1.0	1.01	0.98	0.31	0.29	0.31	0.34
Fiber	8	9	10	11	12	13	14	15
X	0.33	1.01	-1.03	-0.36	0.33	0.98	-1.03	-0.38
Y	-0.43	-0.43	-0.43	-0.41	-1.11	-1.11	-1.13	-1.17

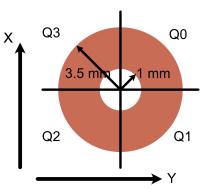
I. HOMOGENISATION OF THE FIBRES RESPONSES

Introduction

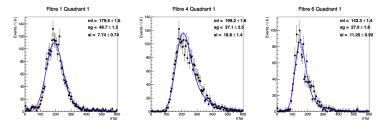
Use muons data (V3 processing)



- Compute the MPV value of the PE/track around each fibre
- Use quarters in order to avoid borders effects (1 quarter used in the corner, 4 in the boundaries and center)
- Homogenise to the MPV



Fits examples :



Results

Coefficients :

$$hit[i]_{corrected} = rac{hit[i]}{coeff[i]}$$

Map of each quadrants (4/fibres) of hit[i]Cor (not htot!):

									- 300	i i									- 300
0.	266.6	289.6	232.3	272.3	158.1	369.8	164.4	179.5		۰.			195.1	228.8	171.4	183.7	182.1	198.9	
-	277.9	306.3	211.9	201.6	163.5	189.6	179.5	175.9	- 250	τ,	181.6	399.4	176.7	165.7	177.6	204.7	199.2	195-1	- 250
e :		142.3	200.6	172.3	208.6	199.2			- 200	2 .	213.5	202.8	205.2	176.7	198.8	190.3	187.1	179.9	- 200
n -		229.3	193.7	191.8	206.7	207.0			- 150		194.7	285.4	200.5	198.6	197.1	197.1	203.0	195.1	- 150
	265.5	242.7	185.1		243.5	247.1	220.0	210.0	1.0	4.	228.6		204.5	167.5	189.2	191.9	194.5	183.7	
<u>.</u>	213.1	215.1	198.6	164.4	252.0	256.8	241.7	234.8	- 100	s -			217.2	181.6	194.9	201.1	210.9	205.6	- 100
υ.			219.7	204.2	189.0	166.9	249.1	222.3	- 50	÷.	227.1	297.4	197.4	179.4	205.2	180.3	203.9	184.7	- 50
r.,			271.9	238.5	192.9	294.4	284.3	235.2		۲.	200.3	188.2	247.2	211.5	209.6	208.6	240.6	194.9	
	ò	i	ż	à	à.	ŝ	é	7	- 0		ò	i	ż	à	- A	ŝ	6	7	- 0

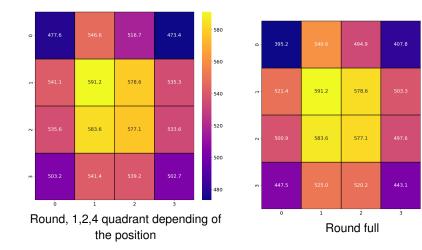
Before applying the coefficients Can be enabled/disabled in the processing. After applying the coefficients

II. BORDERS EFFECTS

Cuts

4 (beam event) < 2000 and > 0					
1 (mean distance to >0 (track has been i	• /				
nition:					
$([i])^2 + (yM - y[i])^2$	(round) dist2> 1 mm and dist2<3.5 mm				
os(xM-x[i])	(square) dist2> 1 mm and				
ps(yM - y[i]) and < 1.3	dist3a and dist3b <3.5 mm xM and yM				
	< 2000 and > 0 1 (mean distance to >0 (track has been n $\overline{[i]}^2 + (yM - y[i])^2$ $\overline{bs}(xM - x[i])$ $\overline{bs}(yM - y[i])$				

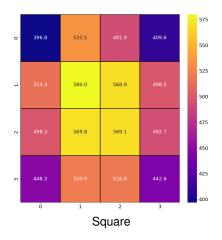
Results 1/2



- Maybe a border effect can be observed
- Roofit did not converge without applying the coefficient, sorry.

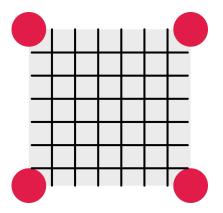
Average values :

- ▶ Center: 571.9±5.6 PE
- ▶ Corner: 424.3±25.7 PE
- ▶ borders: 508.6±20.8 PE

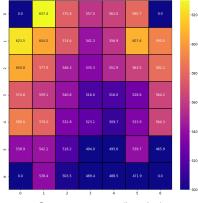


III. UNIFORMITY MAP

Reminder: Conventions

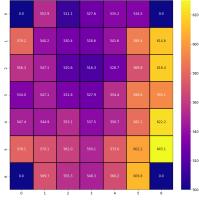


- Space in a 4-fibre square cut in 49x1 mm² squares
- Landau x Gaussian fit in each
- 9 squares can be built
- MPV map can be produced for each square
- Warning : Plots produced 5 minutes ago !



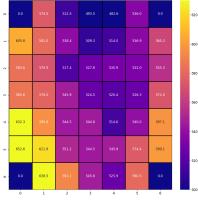
Square 7-3-0-4 (border)

	0.0	599.3	558.4	537.5	546.9	574.6	0.0		- 620		
	641.3	587.9	542.8	531.2	518.4	566.8	568.8		- 600		
2	600.2	574.8	562.3	532.6		525.8	527.3		- 580		
m -	599.4	561.3	536.9	539.5			514.3		- 560		
4	588.7	576.2	550.5	523.3	531.1		540.5		- 540		
'n	616.8	612.7	560.4				552,4				
9	0.0	604.4	543.2	543.9	537.8	543.4	0.0		- 520		
	ò	i	ź	ż	á	ś	6		500		
	Square 8-4-5-9 (border)										



Square 10-11-7-6 (border)

0	0.0	606.4	570.6	578.5	570.3	597.8	0.0	- 620
1.	651.6	629.4			559.0	588.4	646.1	- 600
2 .	613.0	578.0				607.5	601.3	- 580
m -	598.1	589.6				560.0	596.9	- 560
4	635.0	594.8	549.3		569.6	579.4	598.2	- 540
in -	643.9	615.2	596.7	588.9	566.3	615.6	627.8	- 520
9	0.0	609.3	599.4	570.5	580.5	603.6	0.0	
	ò	1	2	3	4	5	6	- 500
				(cen	iter)			



Square 15-12-11-8 (border)