

## Kaon\_LT Experiment - Task #551

### RF time for SHMS PID

08/19/2020 03:17 PM - Richard Trotta

<b>Status:</b>	Resolved	<b>Start date:</b>	08/01/2020
<b>Priority:</b>	Normal	<b>Due date:</b>	08/15/2020
<b>Assignee:</b>	Stephen Kay	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>			
<b>Description</b>			

#### History

##### #1 - 08/31/2020 04:00 PM - Stephen Kay

- % Done changed from 0 to 80

RF offsets set for all Kaon runs and uploaded to the UTIL\_PROTON repo - I'll update the UTIL\_KAONLT repo too with the new timing parameters file.

I'll add some documentation and my spreadsheet for this too.

2ns runs don't look promising in terms of using the RF time for PID. Similarly, some early (Sept/Oct 2018) runs don't look very useful either.

##### #2 - 08/31/2020 06:47 PM - Stephen Kay

- File *Proton\_RF\_Timing.ods* added

- File *2ns\_RF.png* added

- File *4ns\_Bad\_RF.png* added

- File *4ns\_Good\_RF.png* added

.ods of Proton RF timing attached. I processed each kinematic and examined the position of the RFCutDist peak. This should be centred at 2 for 4ns bunch spacing runs and at 1 for 2ns bunch spacing runs.

Also attached are some examples of the RF timing, two cases with 4ns and one with 2ns. Shown in purple is the full distribution with no cuts applied. Shown in red is the distribution for protons (PID applied) with no RF timing cut. Blue is with both PID and RF timing cuts applied. The kinematic is shown at the top of the image.

In the "4ns\_Good\_RF" image, it is clear that the particles that pass the proton PID cuts lie in the distinct second peak. In the 2ns and "4ns\_Bad" cases there is no such distinction however.

##### #3 - 10/14/2020 05:28 PM - Stephen Kay

- % Done changed from 80 to 100

##### #4 - 10/14/2020 05:29 PM - Stephen Kay

- Status changed from *In Progress* to *Resolved*

**Files**

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Proton_RF_Timing.ods	14.5 KB	08/31/2020	Stephen Kay
2ns_RF.png	62.6 KB	08/31/2020	Stephen Kay
4ns_Bad_RF.png	80.7 KB	08/31/2020	Stephen Kay
4ns_Good_RF.png	81.9 KB	08/31/2020	Stephen Kay