Update on Hodoscope Calibrations

Ali Usman

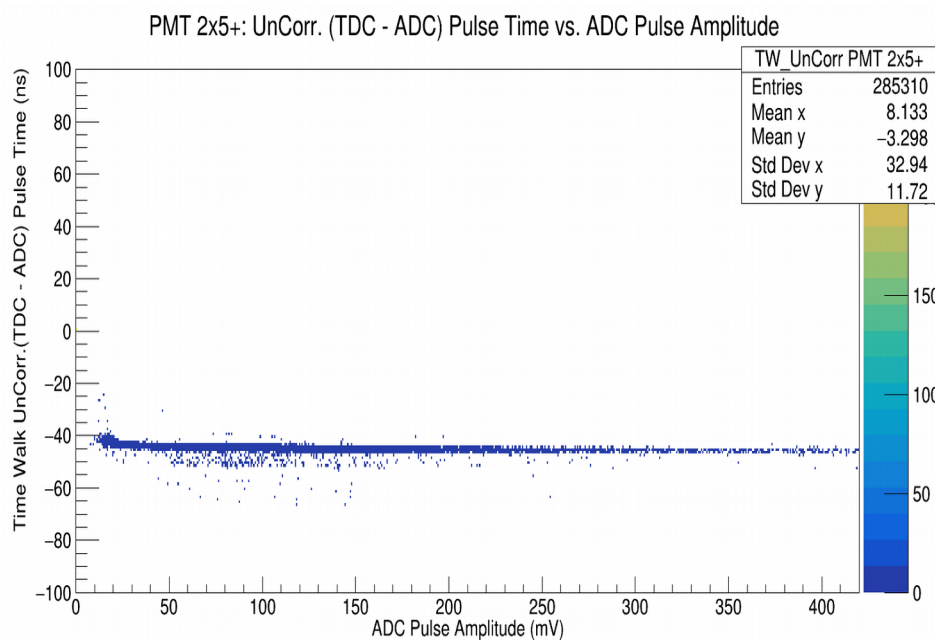**University of Regina**

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Introduction

- **In the previous meeting, we discussed**
    - Introduction to hodoscope calibrations
    - Step by step process of doing the calibrations
    - Results for the SHMS calibrations on Carbon runs in all run periods
- **Just started looking at the HMS calibrations**
- **Using same run numbers from the Carbon runs**
- **Created new batch script for the HMS calibrations**
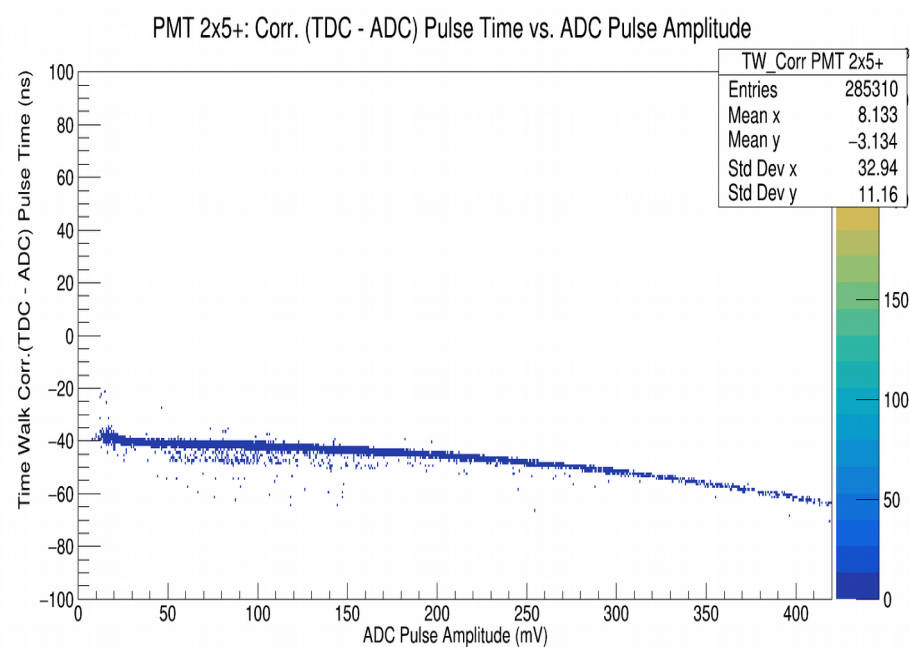- **Only showing results from one run number (5155)**

Time Walk

$$f_{TW}(a) = c_1 + \frac{1}{\left(\frac{a}{TDC_{Thrs.}}\right)^{c_2}}$$

Run # 5155
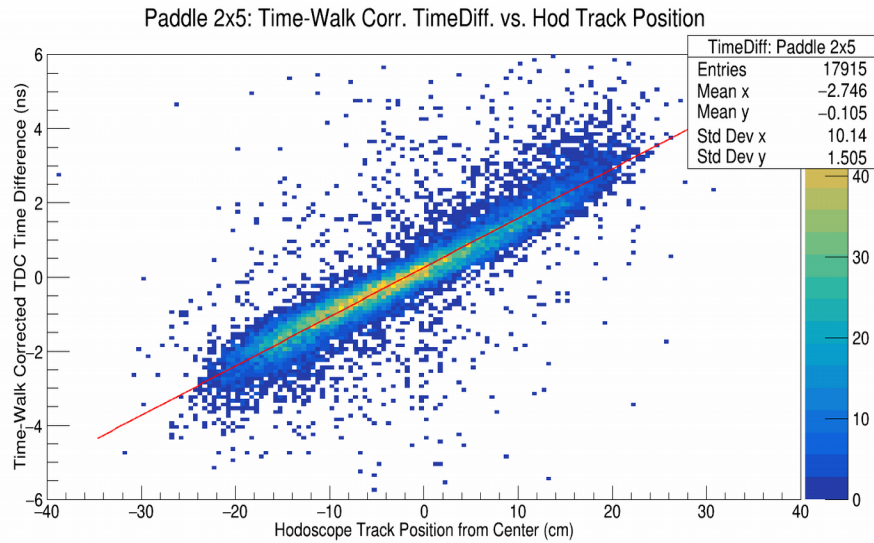

Before

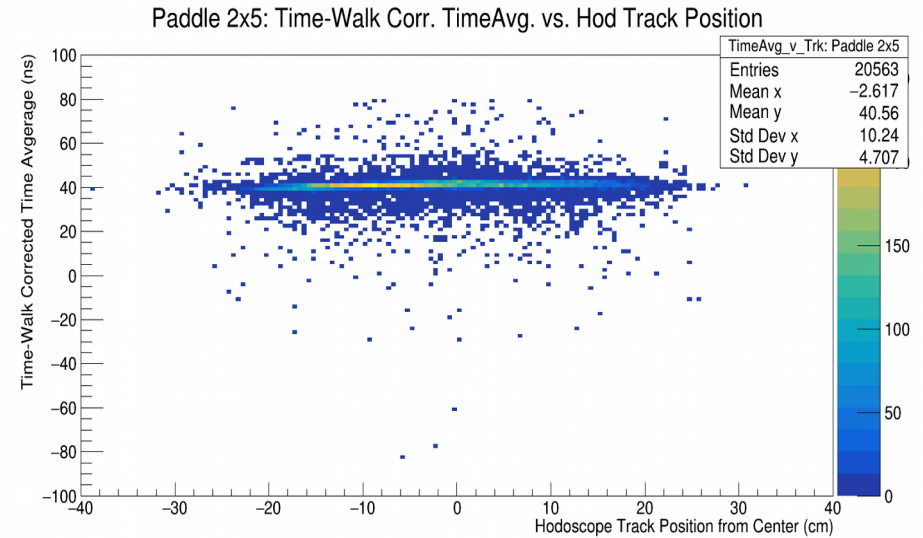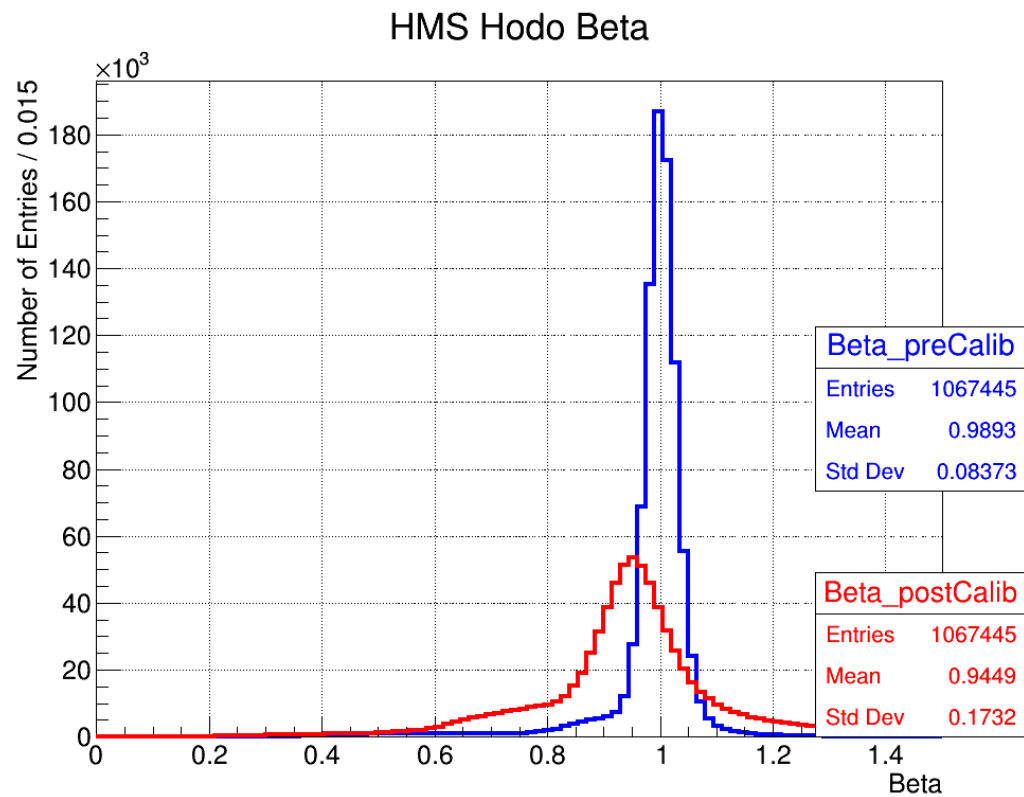

After

Run # 5155

$$t_i = \frac{T_{TW}^{(+)} + T_{TW}^{(-)} - 2t_{Cable}}{2}$$

$$t_{avgCorr} = \frac{1}{2}(t_{Corr.}^{(+)} + t_{Corr.}^{(-)}) = \frac{1}{2}(t_{TWCorr.}^{(+)} + t_{TWCorr.}^{(-)})$$

Run # 5155

Summary and Future Plans

- Managed to run the code for HMS Carbon runs.

- No significant second band was observed.

- There are also some problems with the timing range for some of the PMTs.

- In comparison, HMS calibration is very bad from the SHMS and even the Autumn runs are also not calibrated well.

- Need to look into timing parameters.

- Also need to check the online parameters and compare with other experiments.