

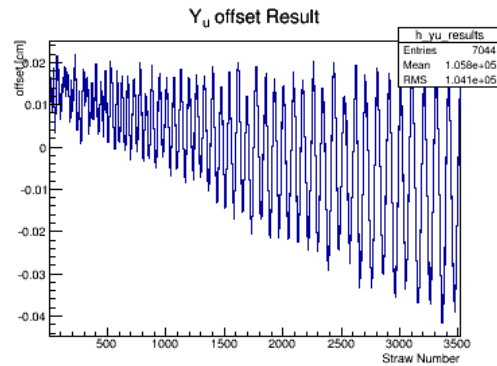
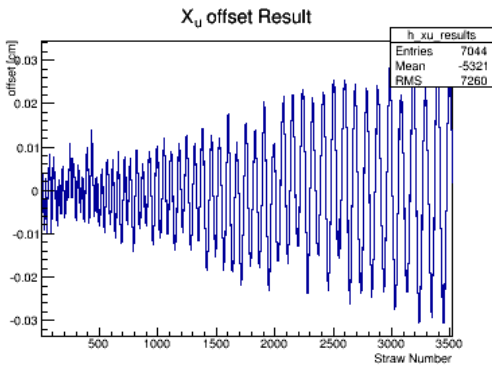
Millepede Update

Michael Staib

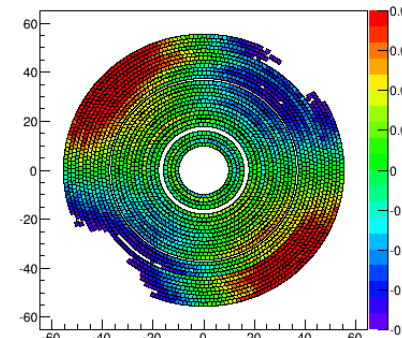
Effect of Regularization Factor

- Regularization of the matrix is handled by defining a “pre-sigma”. The matrix is regularized by multiplying each of the diagonal elements by $(\text{pre-sigma})^{-2}$.
- Modeled offsets are a random gaussian with a width of 150 μm .
- Plotted are the difference between the result of millipede and this input distribution.

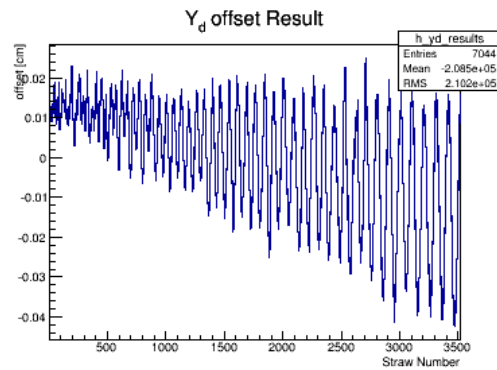
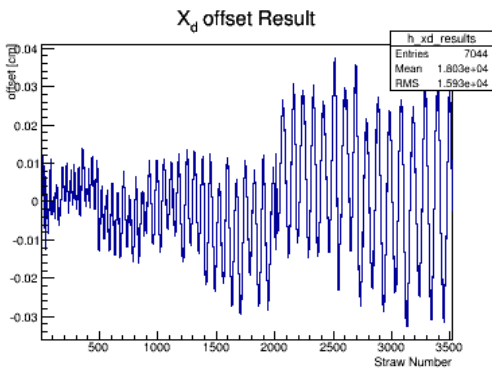
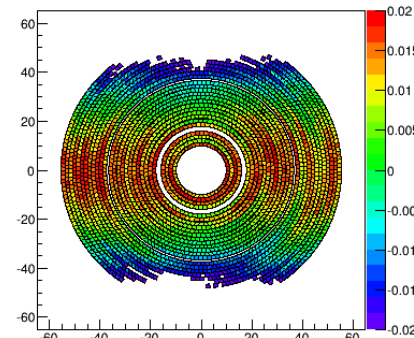
60 μm pre-sigma



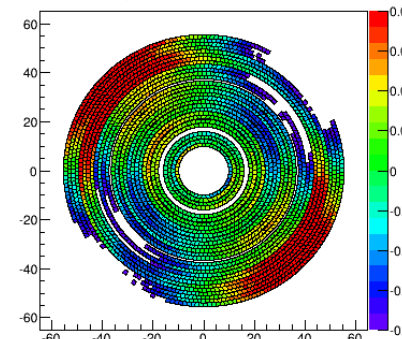
X_u Offset Difference



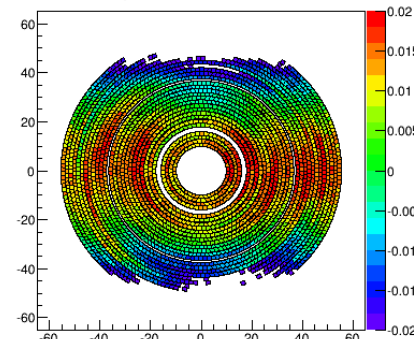
Y_u Offset Difference



X_d Offset Difference



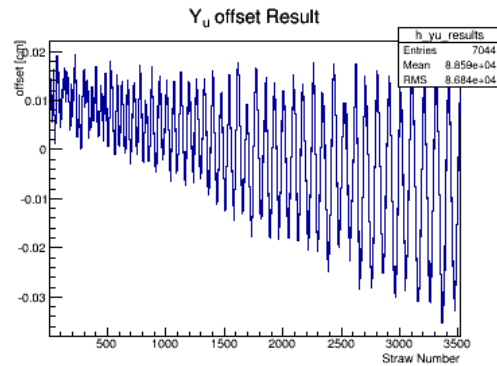
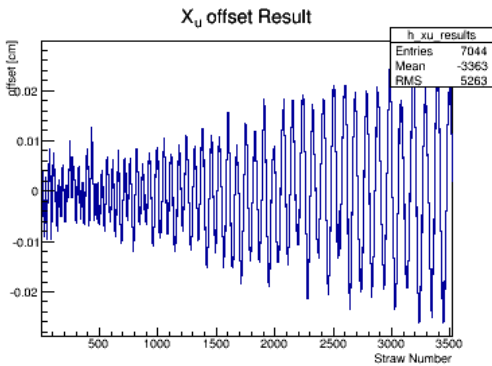
Y_d Offset Difference



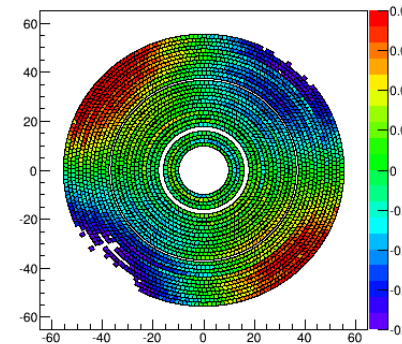
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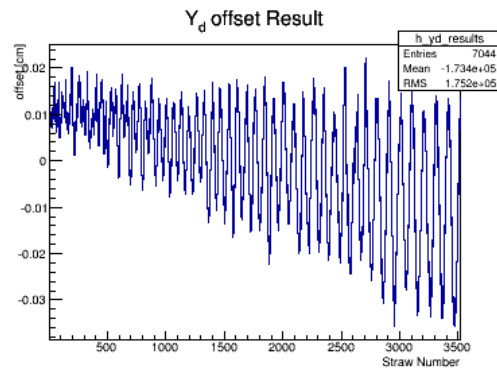
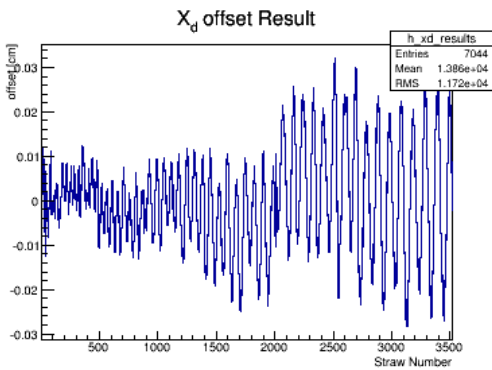
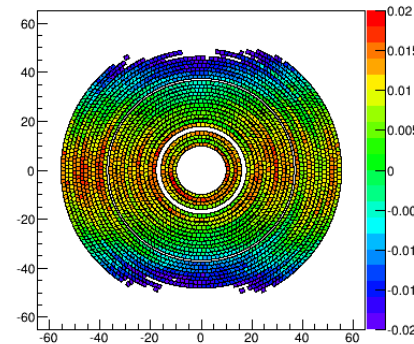
50 μm pre-sigma



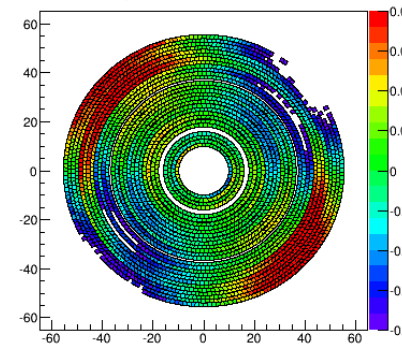
X_u Offset Difference



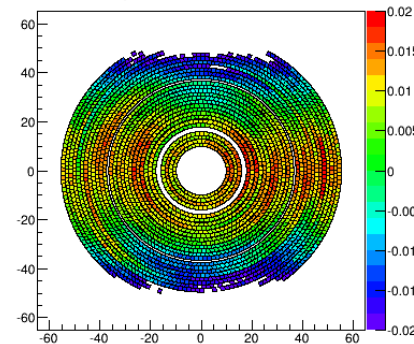
Y_u Offset Difference



X_d Offset Difference



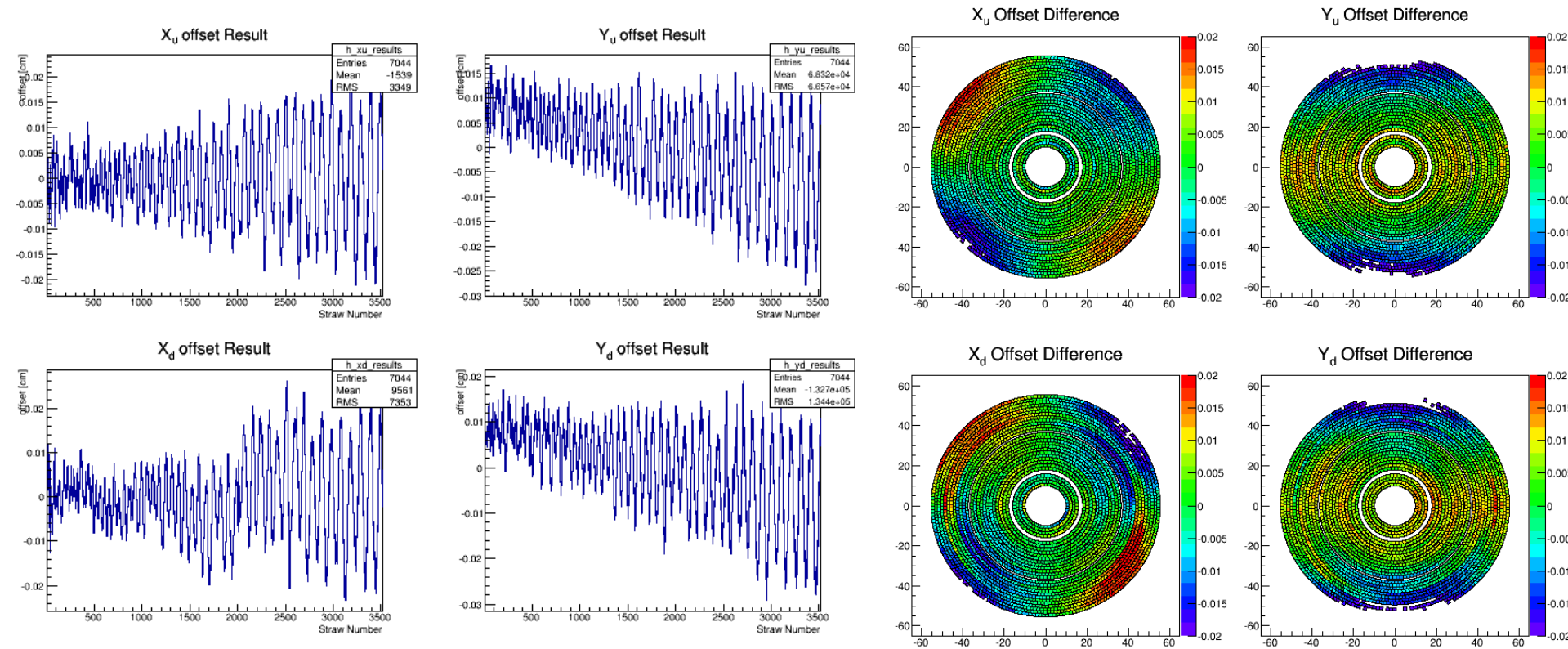
Y_d Offset Difference



Effect of Regularization Factor

- Regularization of the matrix is handled by defining a “pre-sigma”. The matrix is regularized by multiplying each of the diagonal elements by $(\text{pre-sigma})^{-2}$.
- Modeled offsets are a random gaussian with a width of $150\ \mu\text{m}$.
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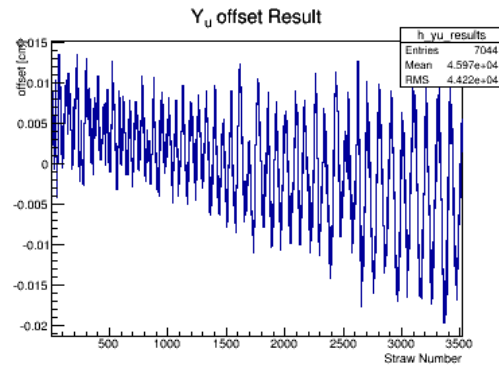
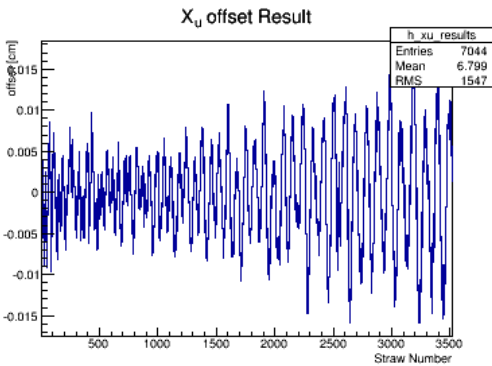
40 μm pre-sigma



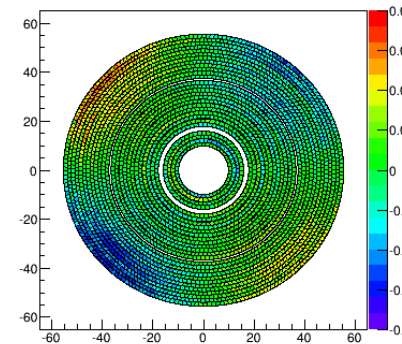
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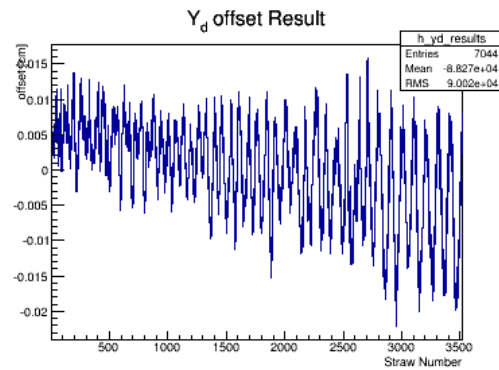
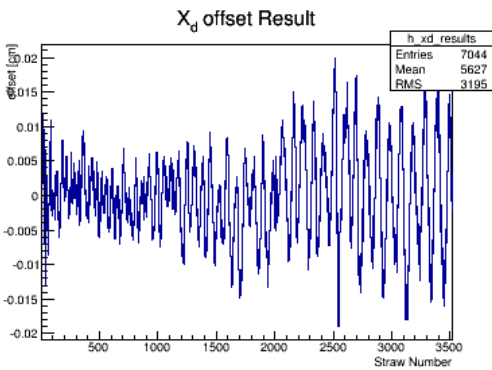
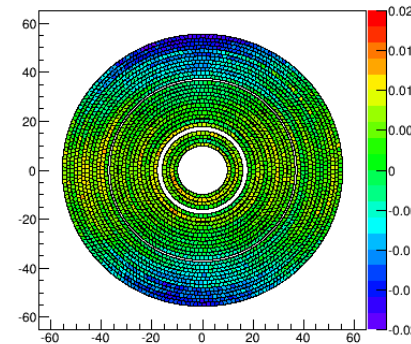
30 μm pre-sigma



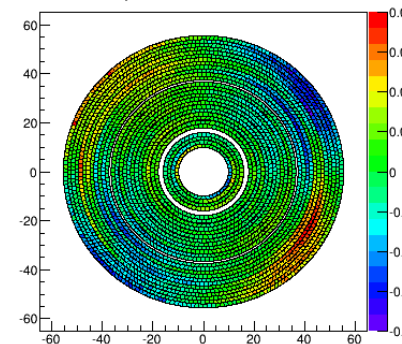
X_u Offset Difference



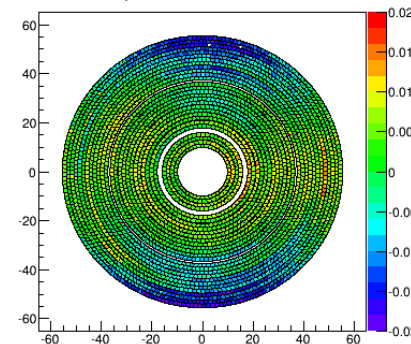
Y_u Offset Difference



X_d Offset Difference



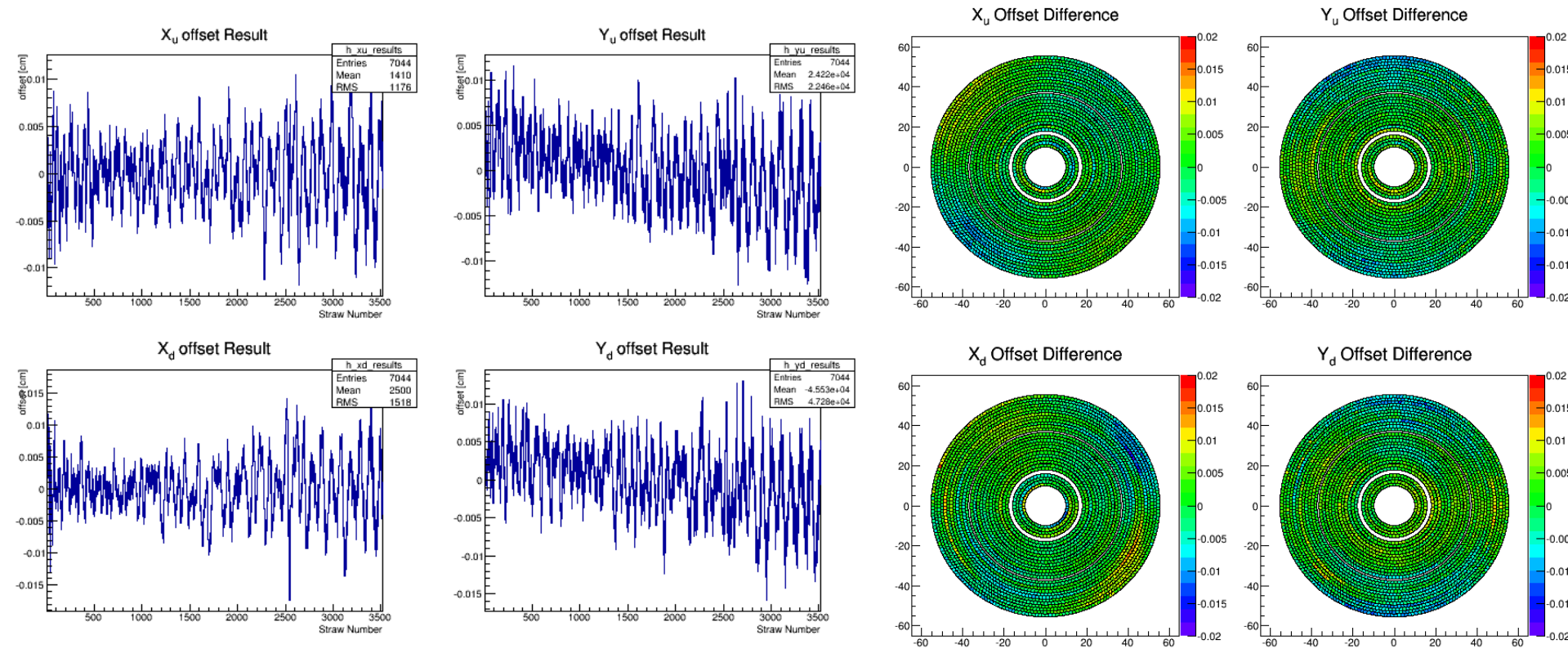
Y_d Offset Difference



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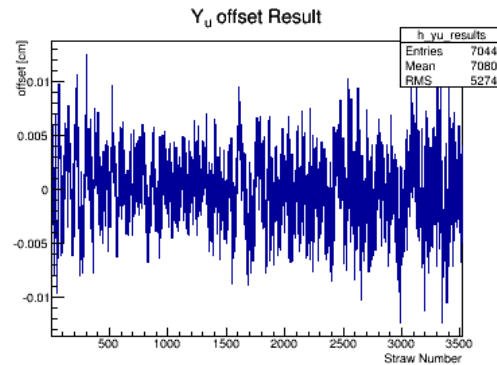
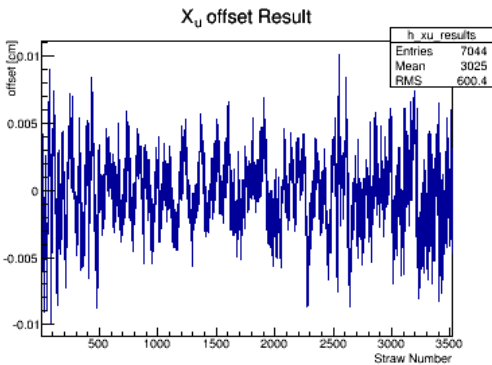
20 μm pre-sigma



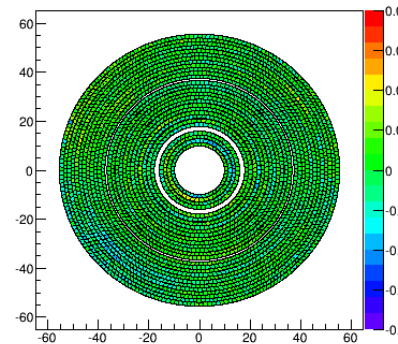
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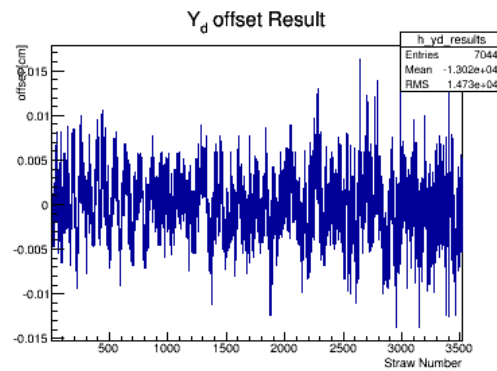
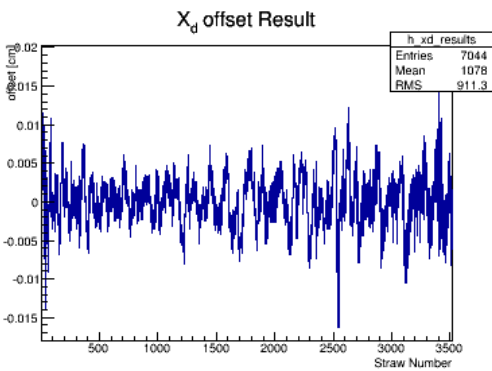
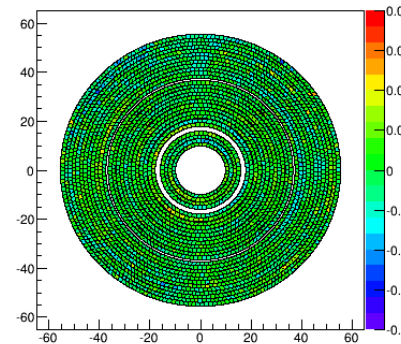
10 μm pre-sigma



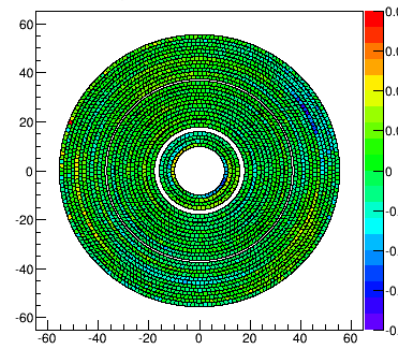
X_u Offset Difference



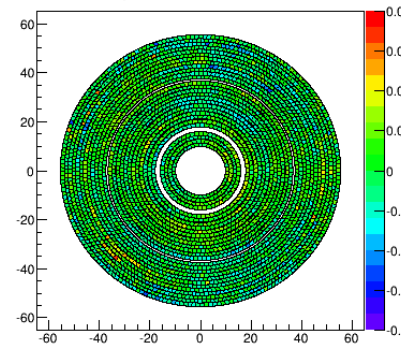
Y_u Offset Difference



X_d Offset Difference



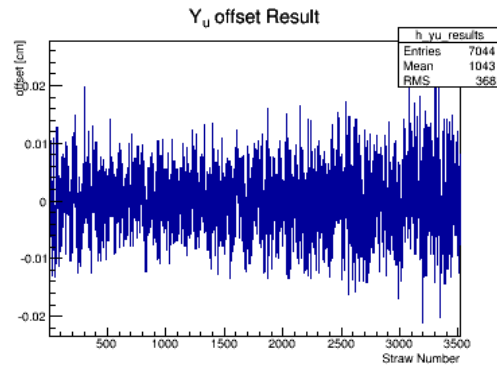
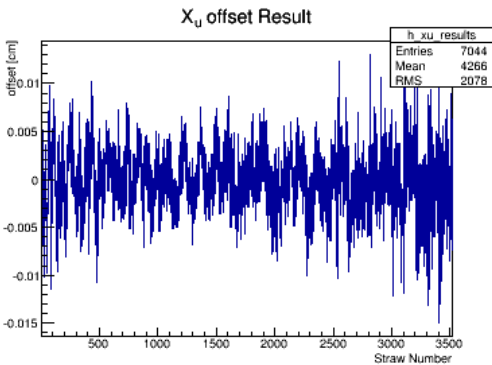
Y_d Offset Difference



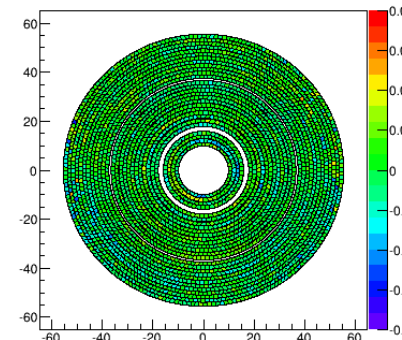
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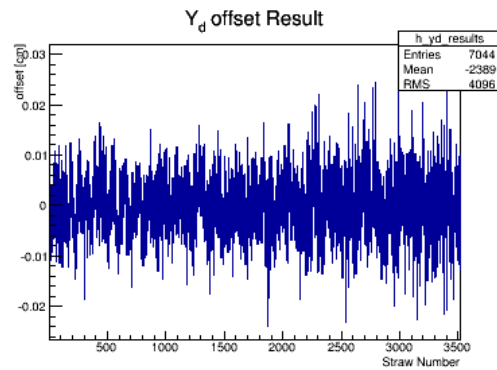
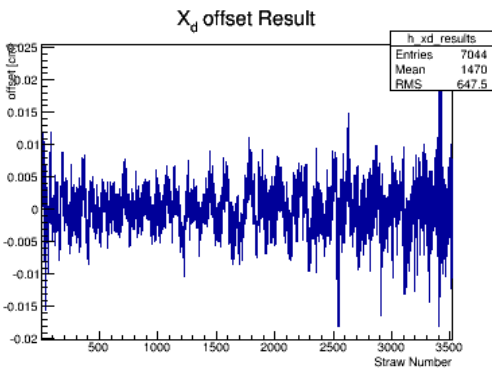
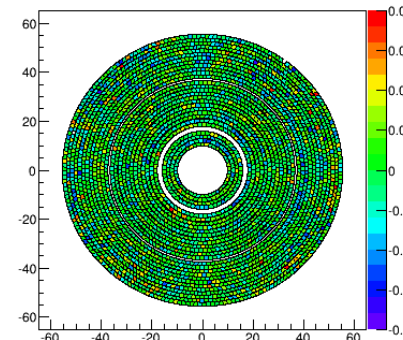
5 μm pre-sigma



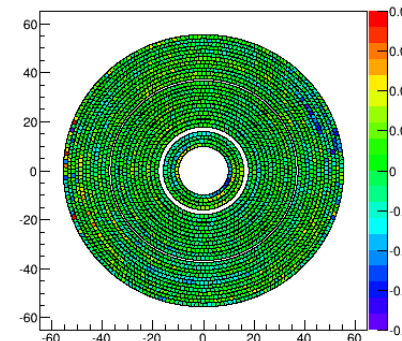
X_u Offset Difference



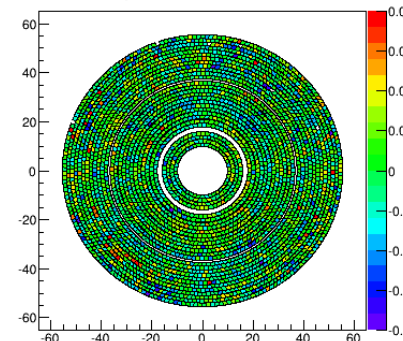
Y_u Offset Difference



X_d Offset Difference



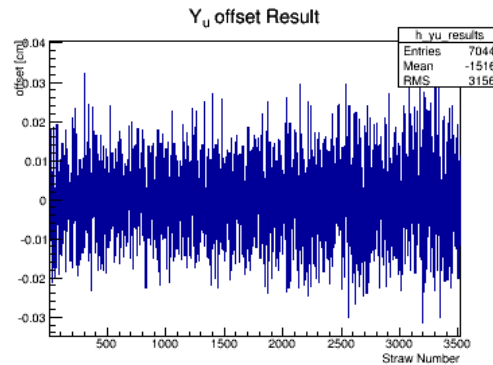
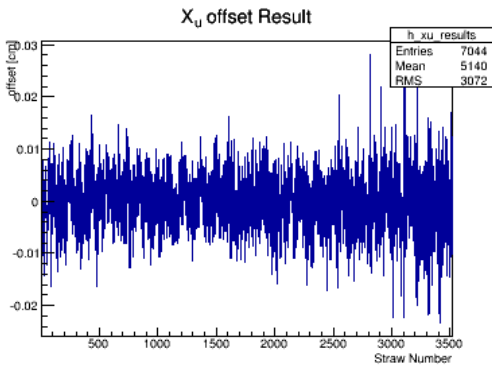
Y_d Offset Difference



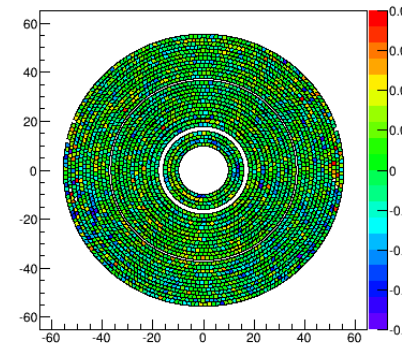
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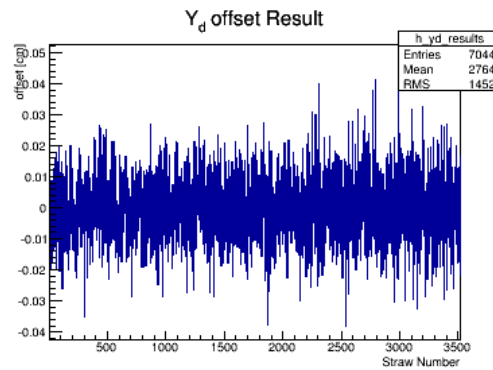
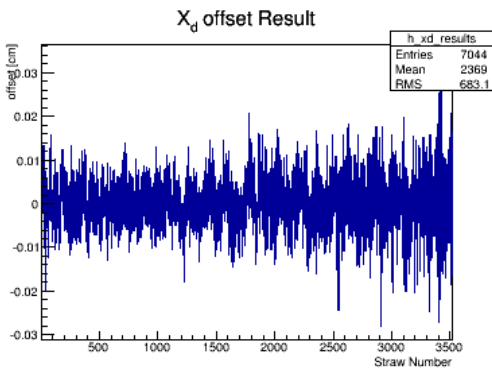
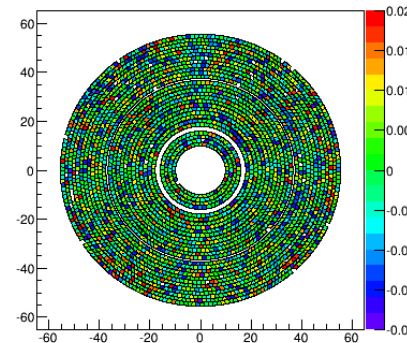
2.5 μm pre-sigma



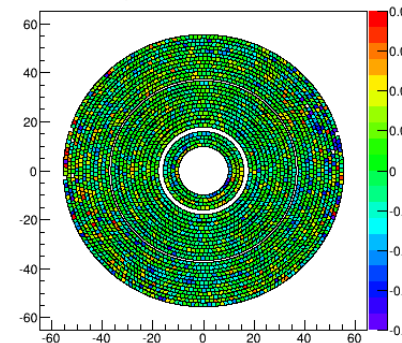
X_u Offset Difference



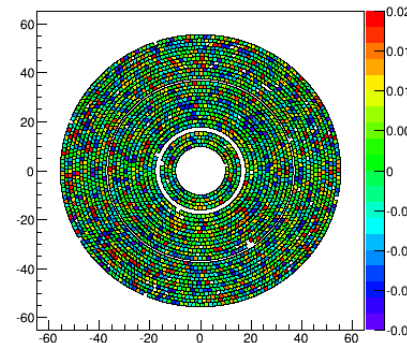
Y_u Offset Difference



X_d Offset Difference



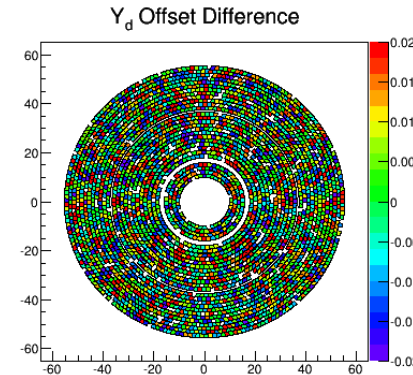
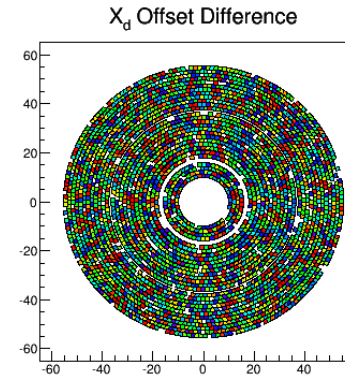
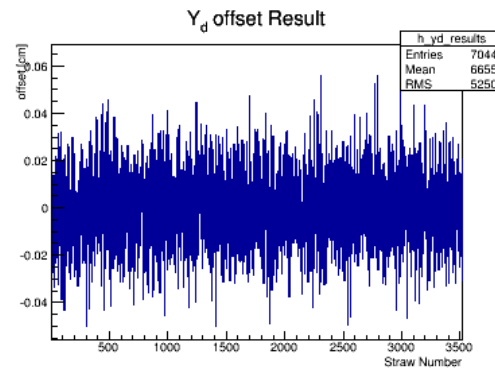
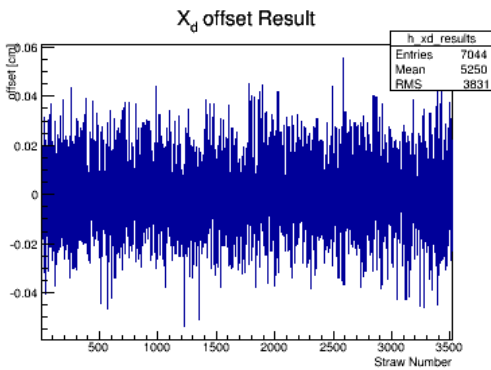
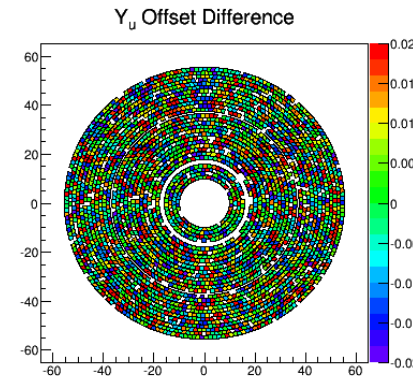
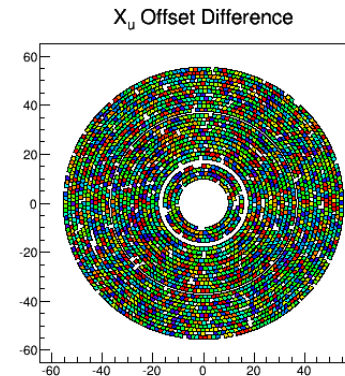
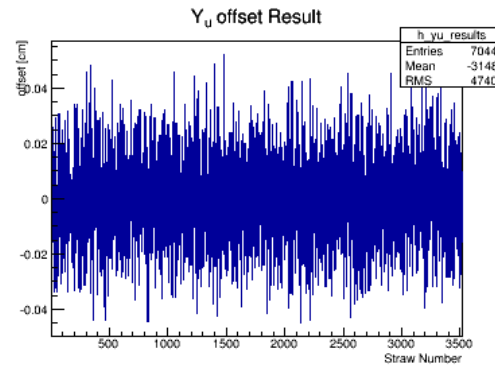
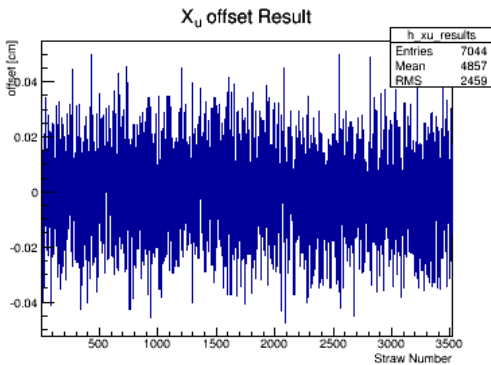
Y_d Offset Difference



Effect of Regularization Factor

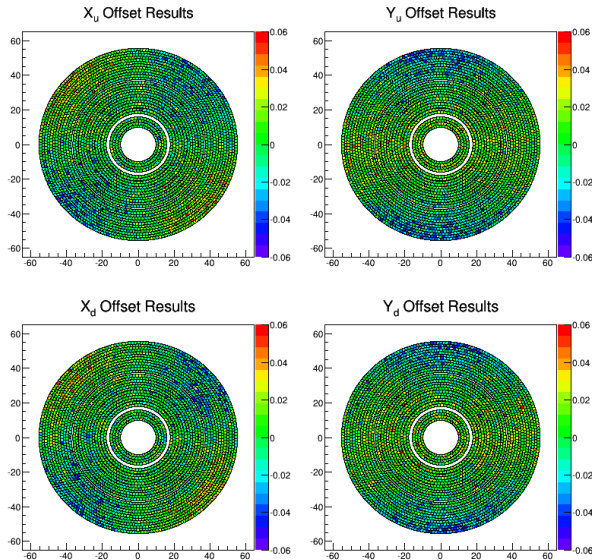
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1 μm pre-sigma

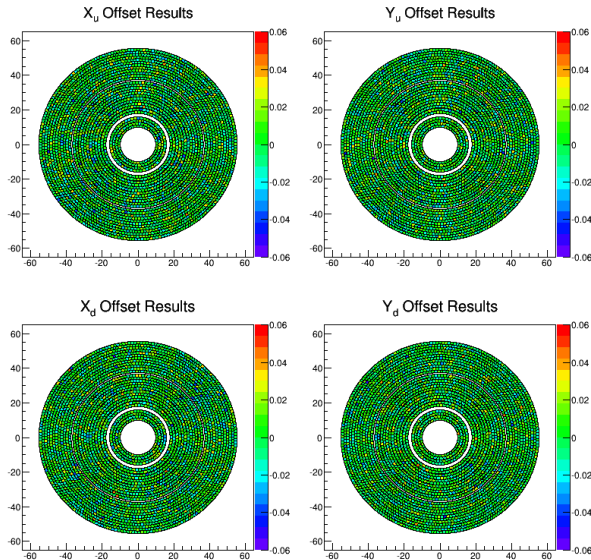


Raw Results

50 μm pre-sigma



10 μm pre-sigma



1 μm pre-sigma

