Noise Simulation Analysis of MANGO data @LNGS

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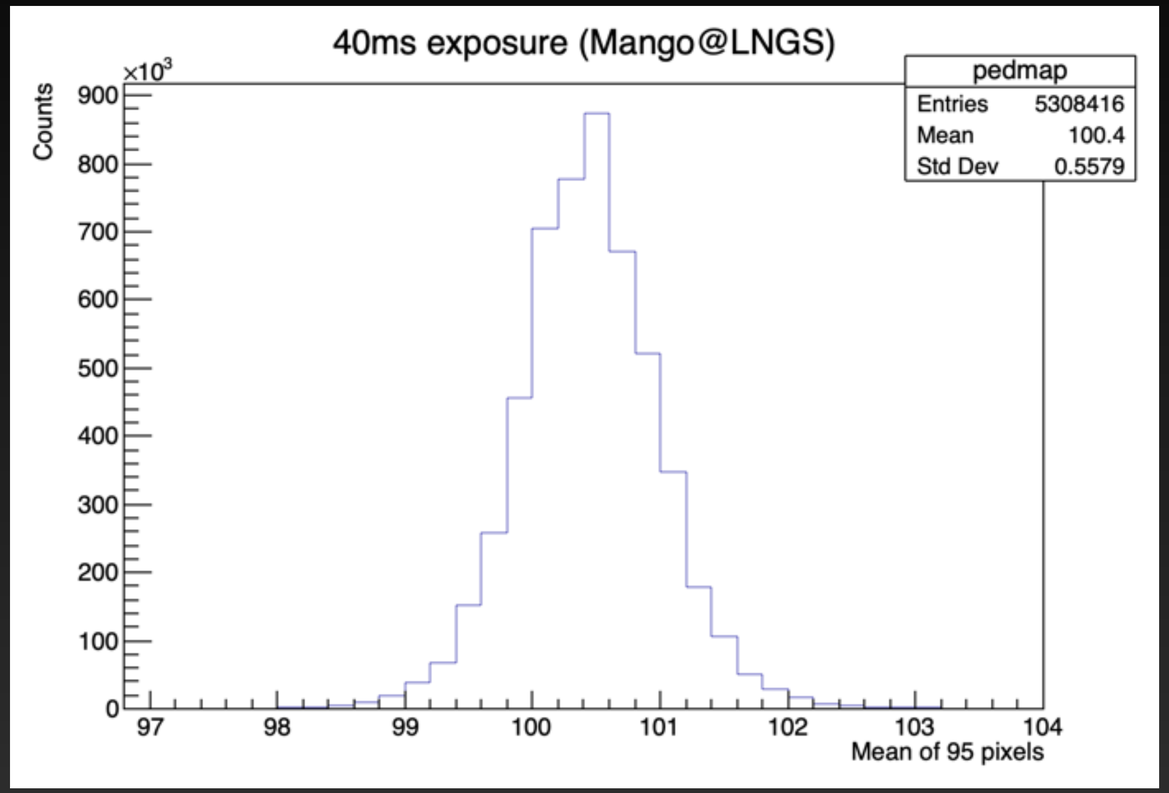
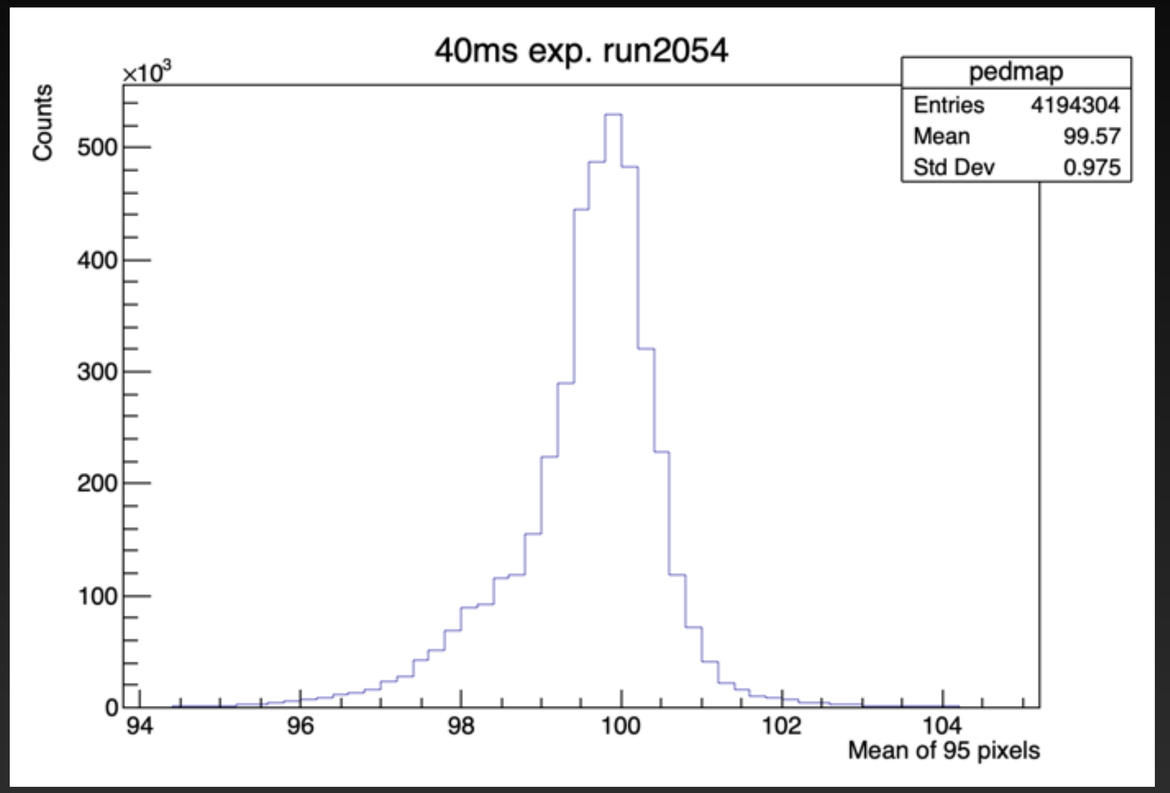
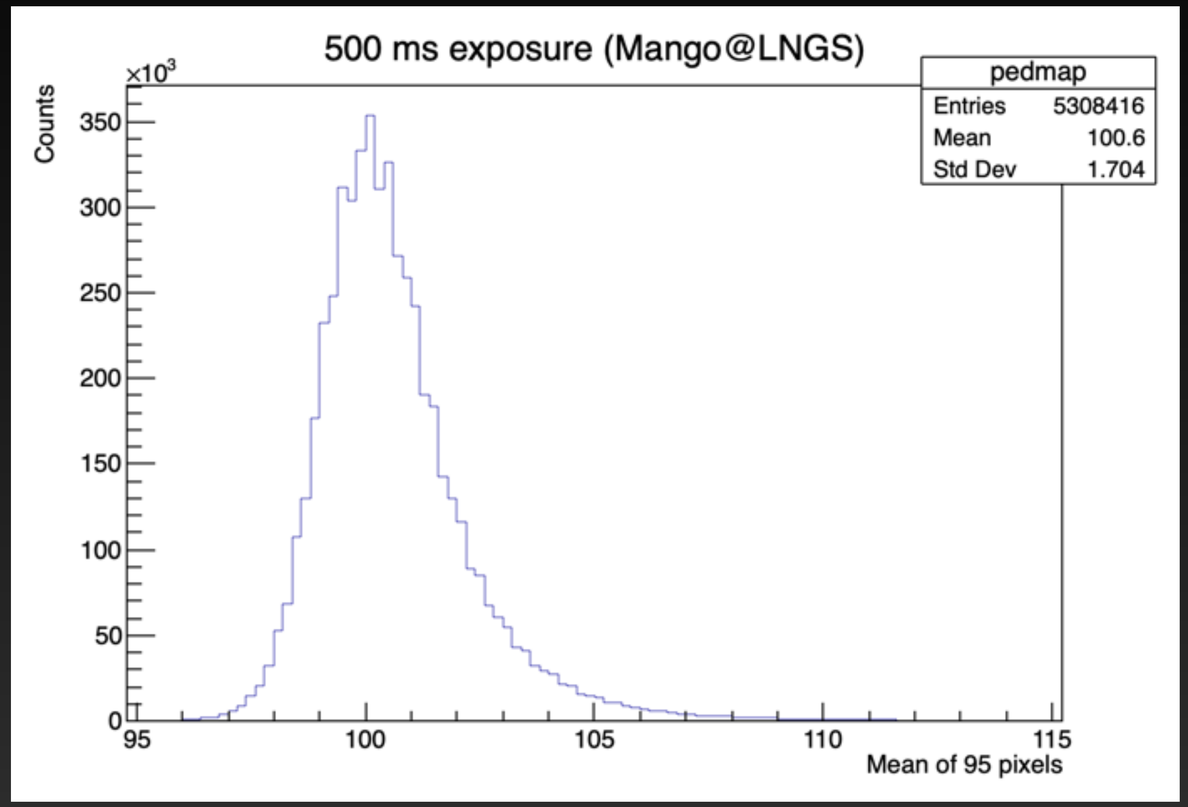
Comparison of noise of Flash and Fusion

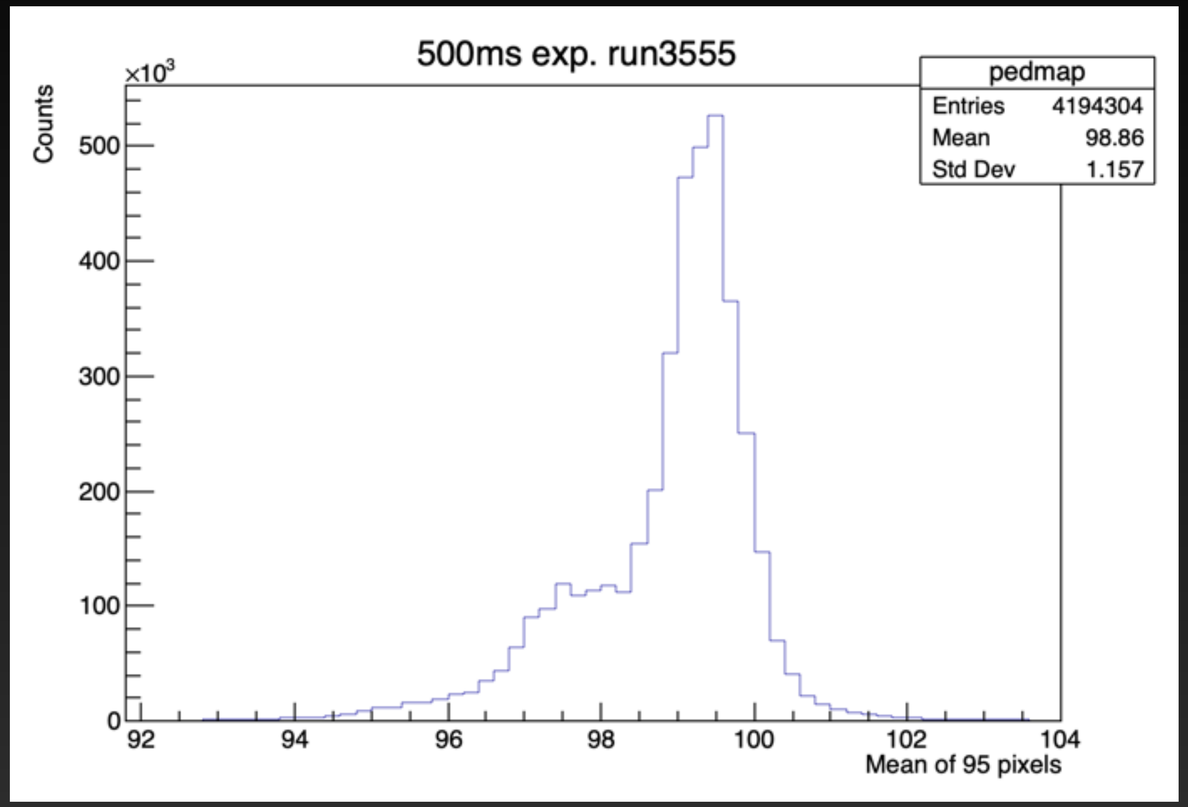




- Data at LNGS was taken with the Orca Fusion camera with cap on. And data of Run 2054 was collected with Orca Flash (Probably with LEMOn detector).

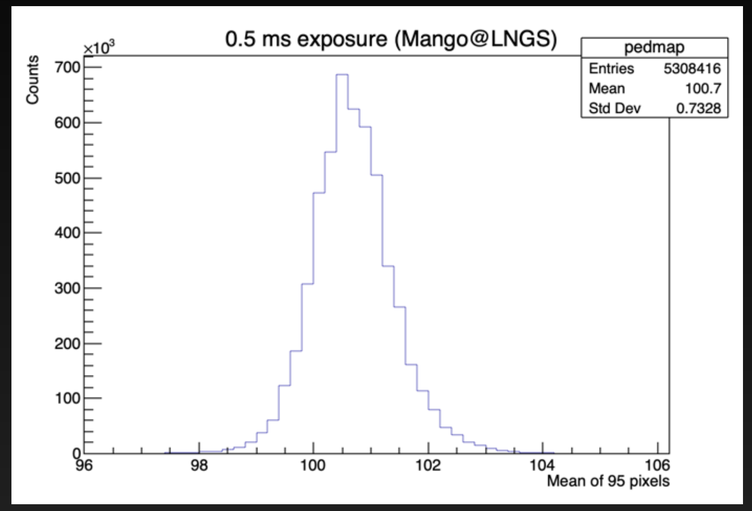
Comparison of noise of Flash and Fusion

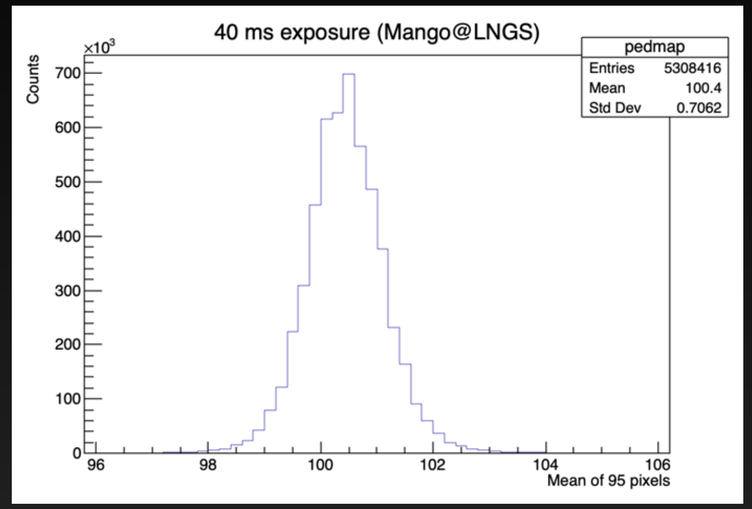


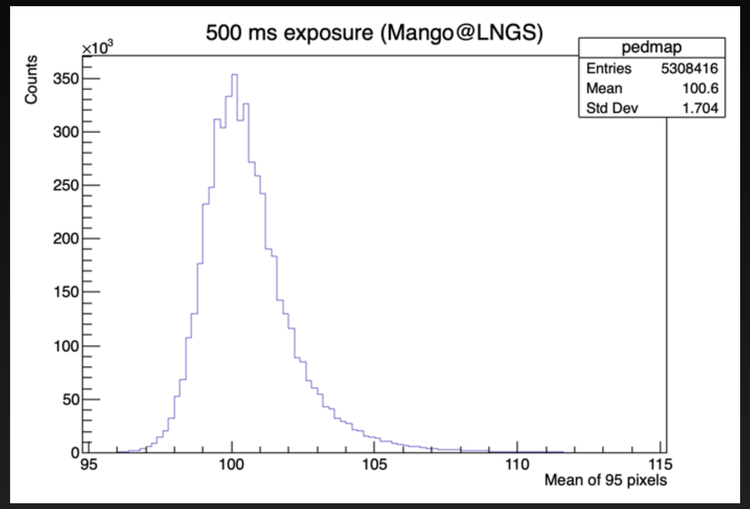


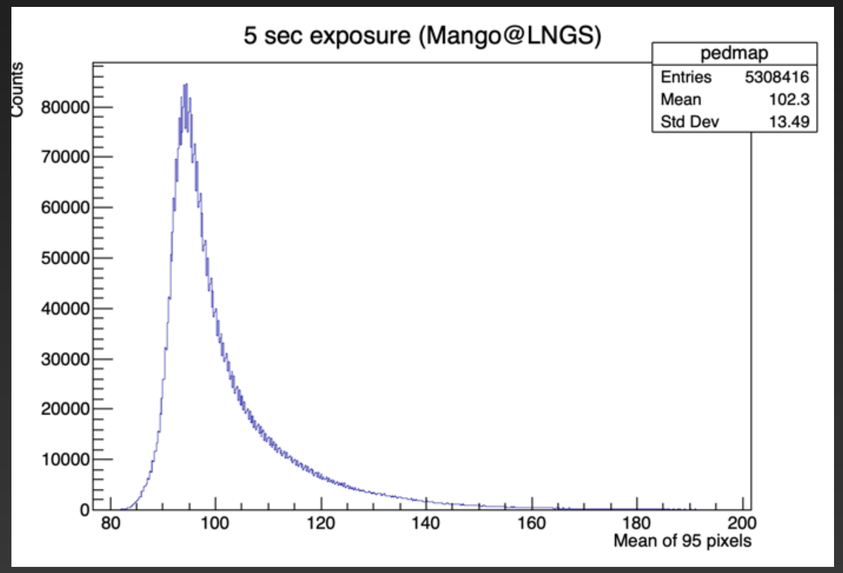
- Data at LNGS is collected with ORCA Fusion and Run 3555 was collected with ORCA Flash.

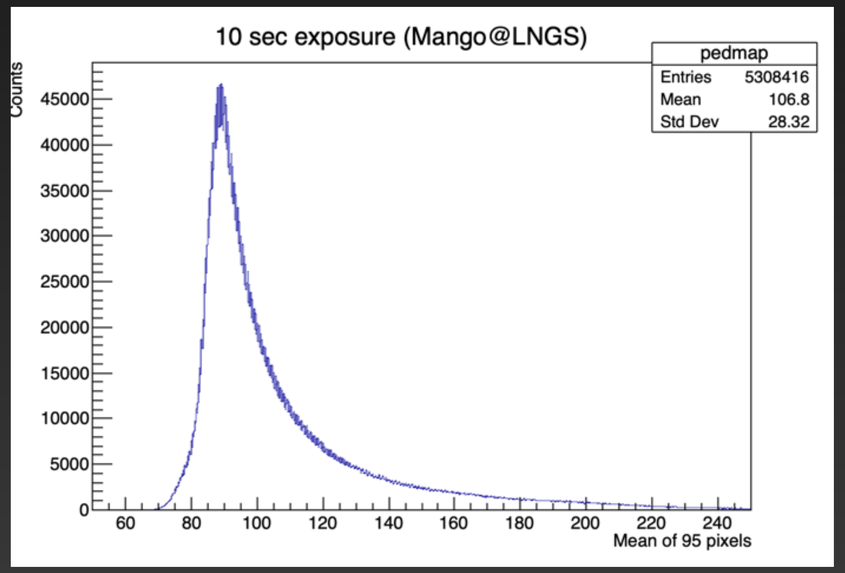
ORCA Fusion with Different exposure











- All the data was collected with Orca Fusion and cap on.

Conclusion

- Orca Fusion seems to have noise on a bit higher side compared to Orca Flash.
- Within 40 ms exposure, noise distribution of Orca Fusion is Gaussian.
- With the increased exposure the noise of the camera also increases (which is expected), but with higher exposure the gaussian distribution changes to right skewed distribution .