

# Validation of ZDC Emulation

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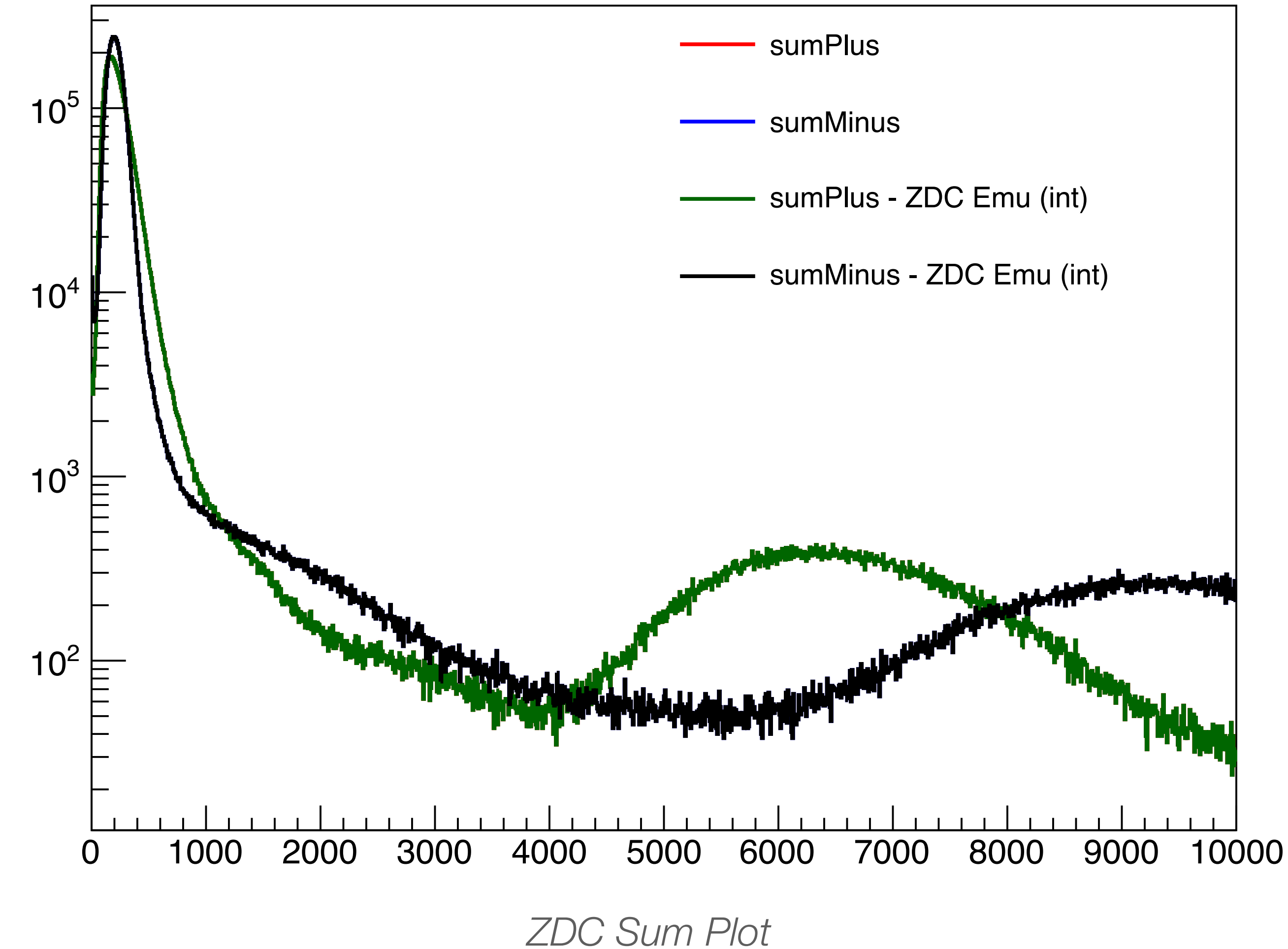
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# Validation at a Glance

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- \* Step 1: Produce L1 emulator + forest output
  - \* Instructions for how to do this is included on the Dropbox
  - \* Dropbox: [https://paper.dropbox.com/doc/Validation-of-the-L1-ZDC-emulation--B~NR9vW0u7c4LiorHH\\_kMVUzAg-vhlyaRuPCMwQPeJQBgzKQ](https://paper.dropbox.com/doc/Validation-of-the-L1-ZDC-emulation--B~NR9vW0u7c4LiorHH_kMVUzAg-vhlyaRuPCMwQPeJQBgzKQ)
- \* Step 2: Use the output from Step 1 and validate the ZDC emulation
  - \* Validation Code: <https://github.com/ginnocen/UPCopenHFanalysis/tree/integratetriggeremul>
  - \* Instructions for how to do this is included on the Dropbox
- \* Step 3: Plot distribution of sumPlus and sumMinus from emulation and ZDC digi methods

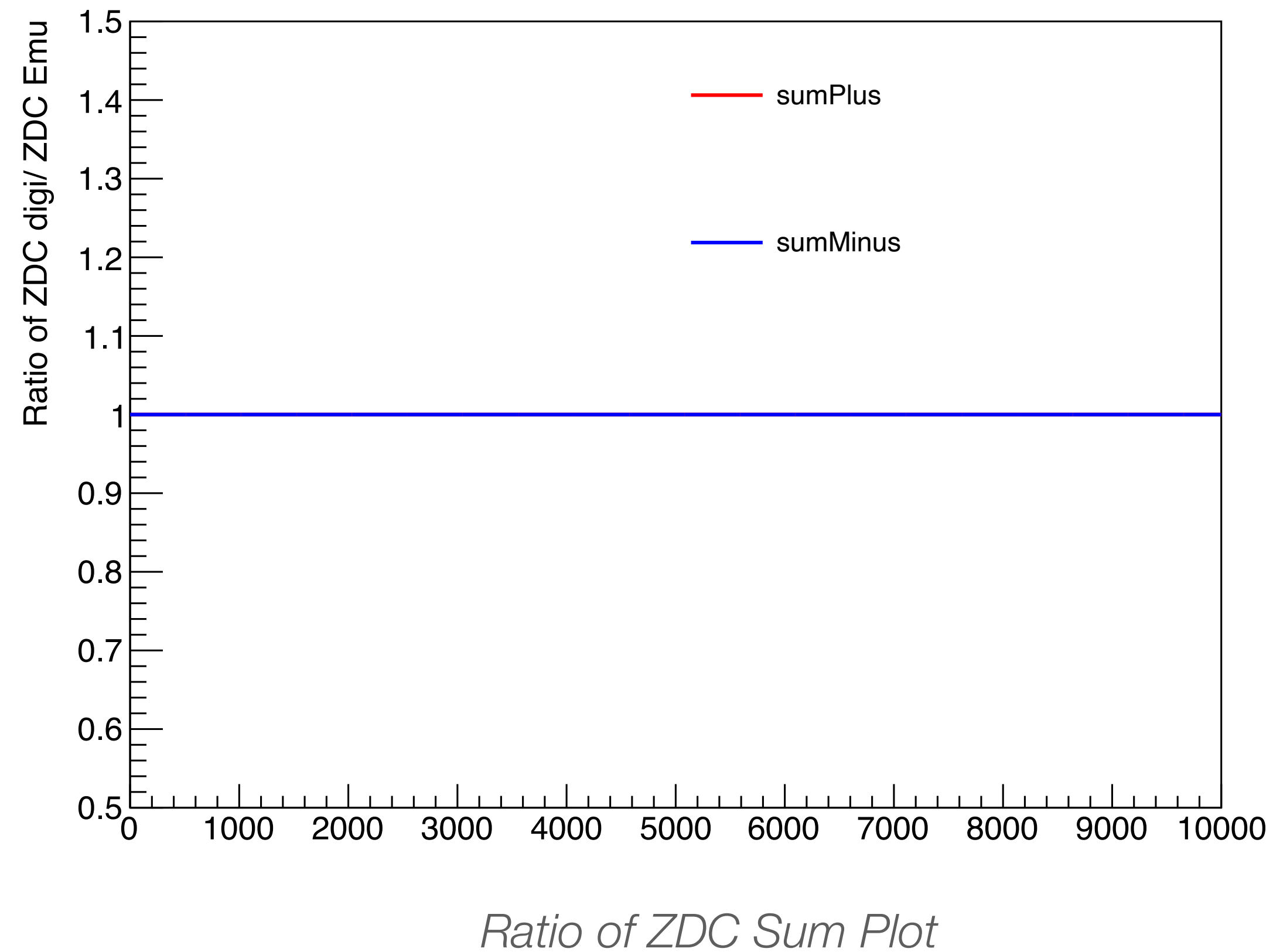
# Sample Validation



- \* **On a large statistics sample - the two methods are consistent!**
- \* Validation code will also throw an error in case these values do not agree.
- \* Let's check some other metrics

# Sample Validation

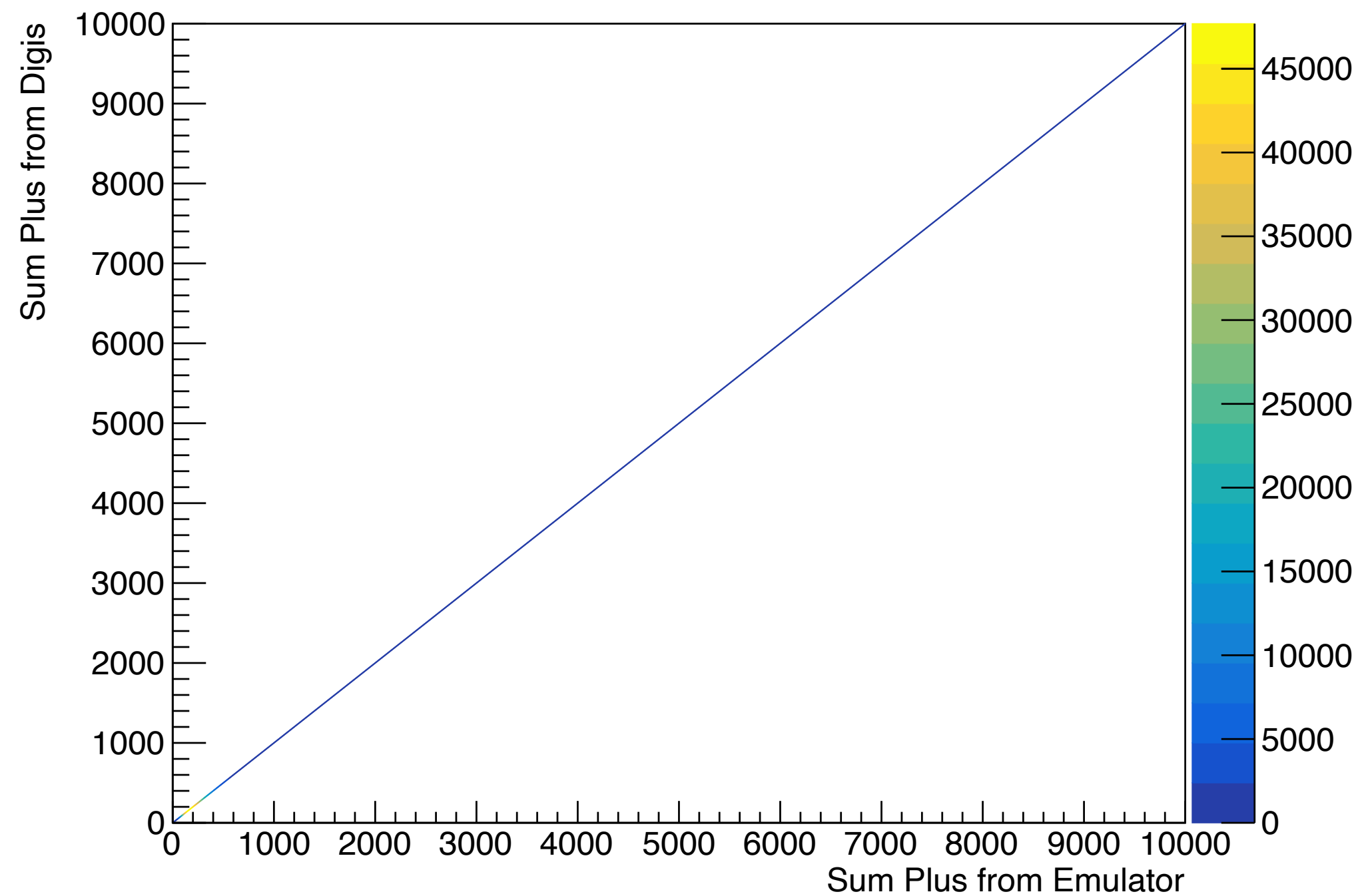
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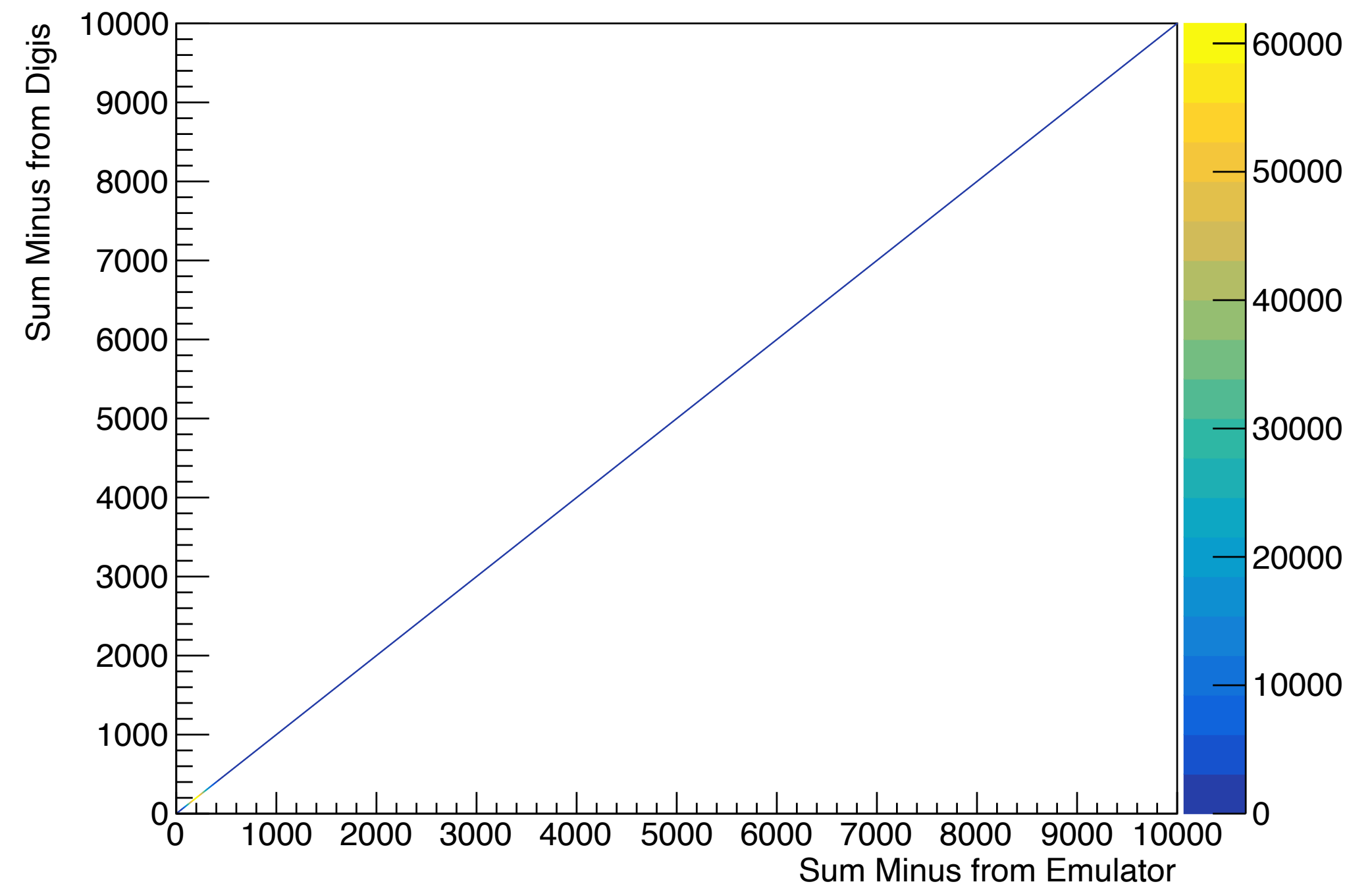
- \* Ratio consistent with unity indicating this is exactly true.

# Sample Validation

- \* 2D correlation further validates that these values are exactly the same on an event-by-event basis



*2D correlation of sum plus values from emulator and digis*



*2D correlation of sum minus values from emulator and digis*