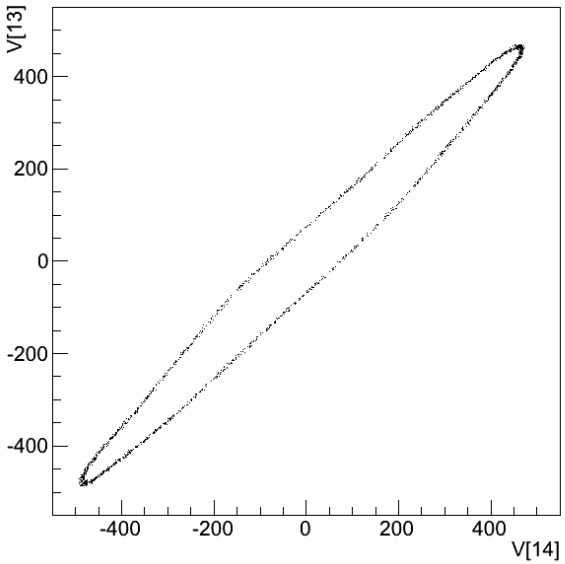
New PSEC4 Data Sample

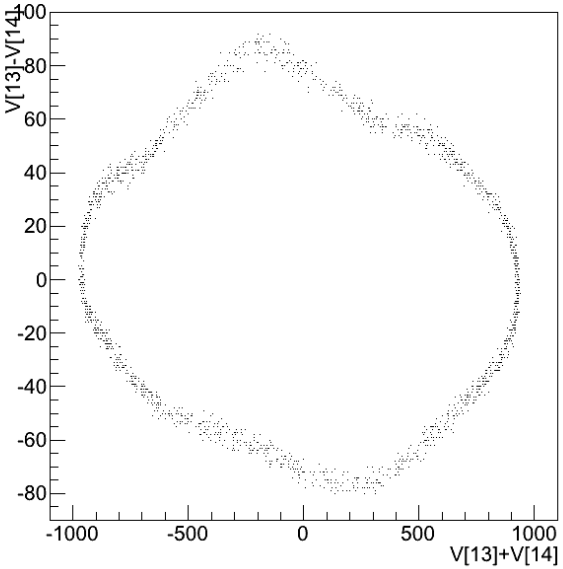
- Previous data indicated some strange features in correlation plots.
  - Possibly due to nonlinearity, correlated noise.
  - Eric sent new data with nonlinearity corrections applied so we can see the difference due to nonlinearity only.
- Data sent by Eric on October 21:
  - All at 10.24 GSa/s
  - CH3: 240 MHz sine wave input, 2000x2 events

- Without corrections (shown last week):

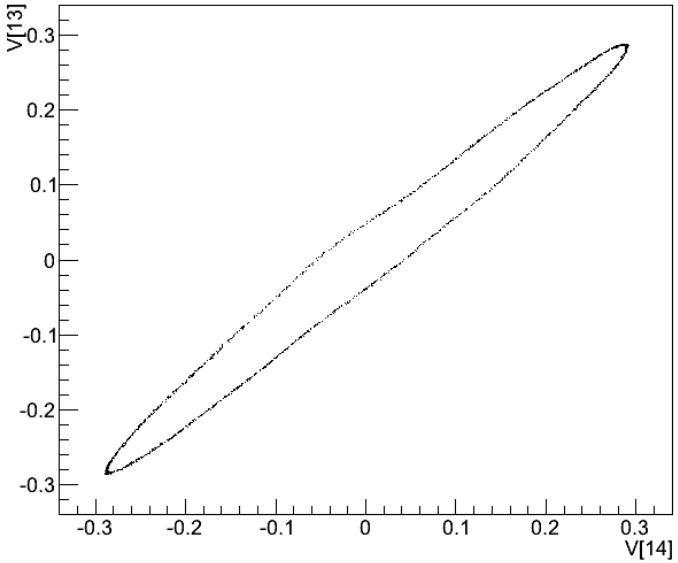
Cell 13 vs. Cell 14

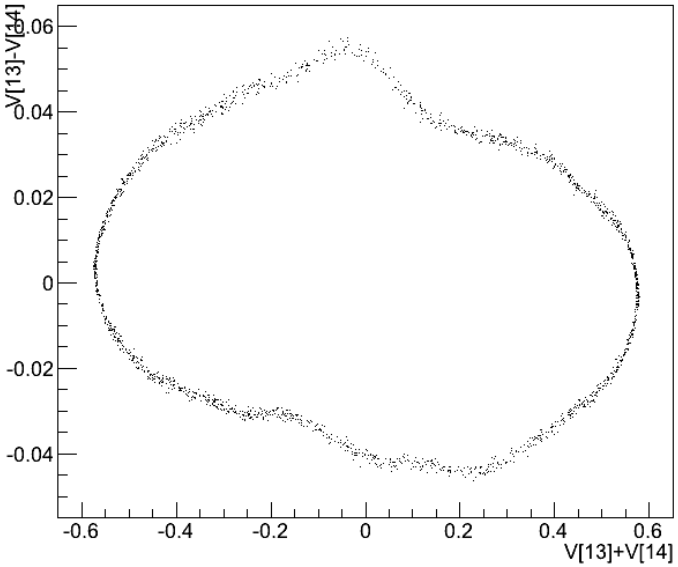


Cell 13, 14: difference vs. sum



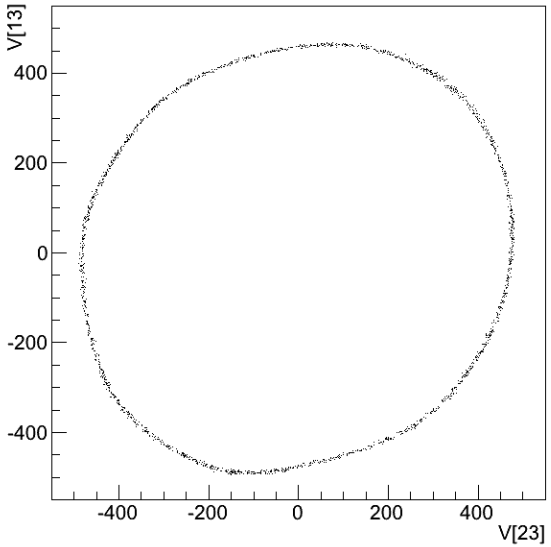
- With corrections:



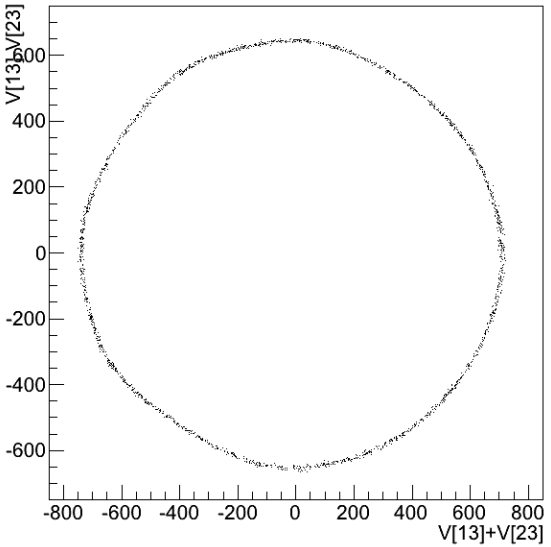


- Without corrections (shown last week):

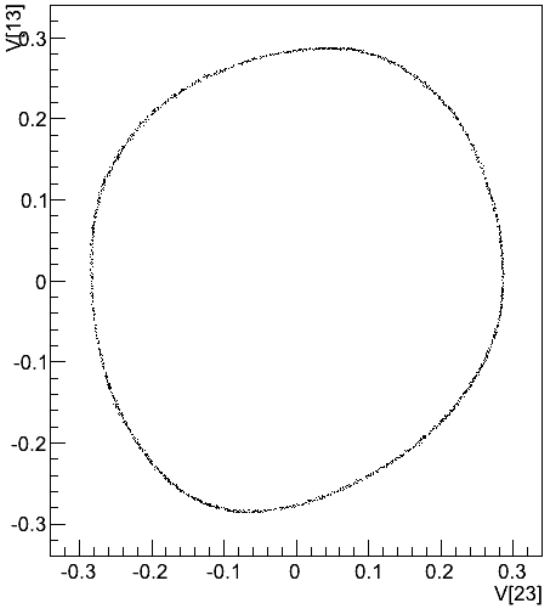
Cell 13 vs. Cell 23

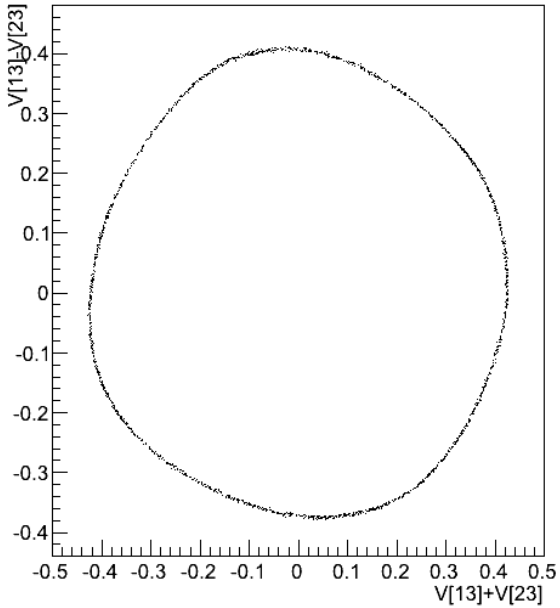


Cell 13, 23: difference vs. sum



- With corrections:





What next?

- Unfortunately, nonlinearity does not seem to be the culprit.
- How to proceed if it's correlated noise?
  - If we understand the mechanism well, we may be able to move forward.
  - If not, maybe the simpler methods are more appropriate.