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

• With corrections:

Cell 13, 23: difference vs. sum
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.