Gain calibration R&D

Antoine

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Machine study 4/22

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Author:	Antoine T Chapelain, Vardan Khachatryan
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Sub-System:	CBPM_II
Shift Key:	20240422_1600

Yesterday's shift was derailed but maybe it is for the better. I analyzed the two sets of 9-point grid data and extracted the gains. The gains between the two sets are not spot on at all...

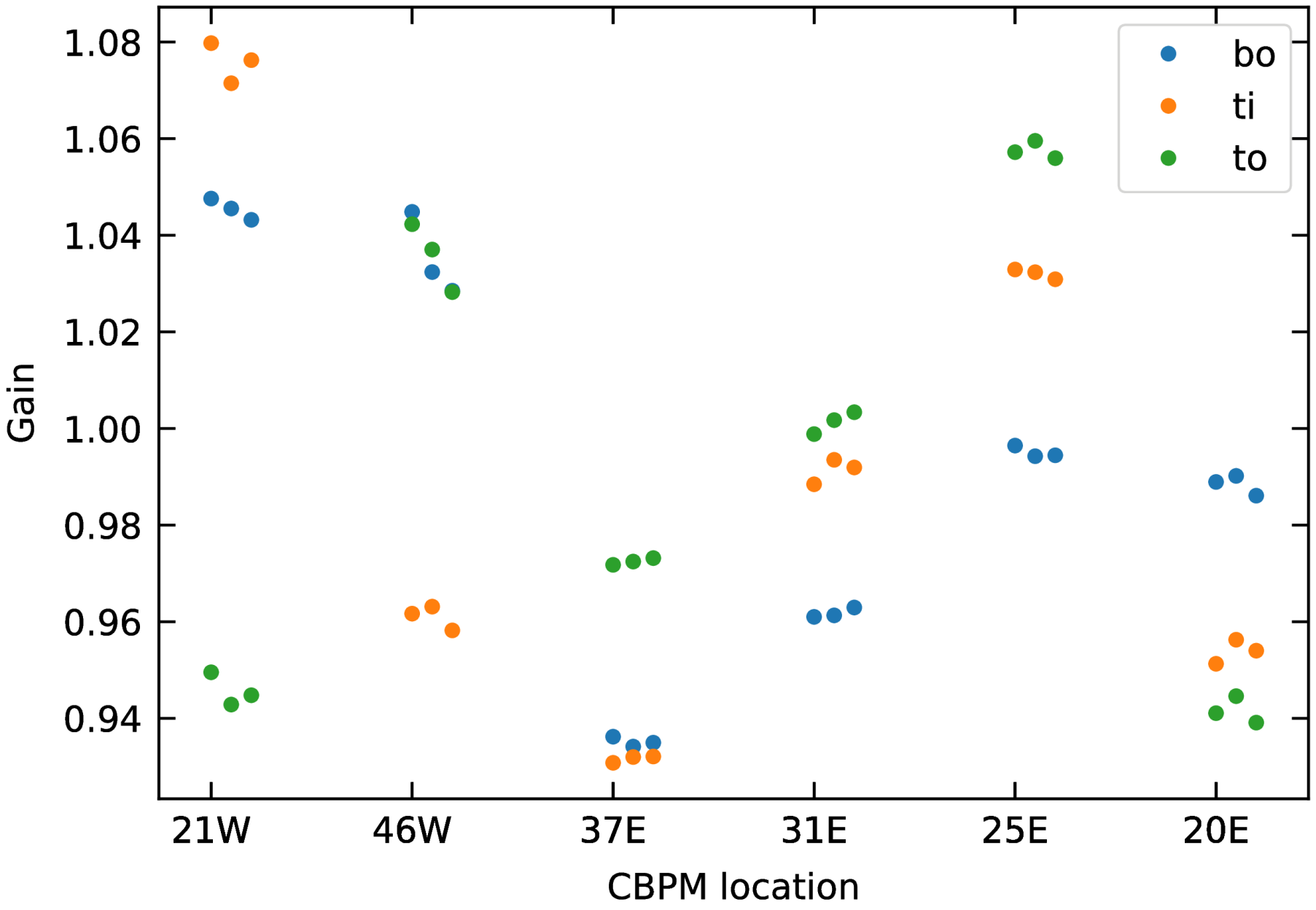
So today, I want to collect as many times in a row as possible the same set of data according to the procedure:

1) magnet loop
2) collect pedestal data
3) time scan CBPM
4) collect 9-point in a specific order

The goal is to see how repeatable the gain measurement is given data taking being as identical as can be:

1. magnet loop for hysteresis
2. collect CBPM pedestal data in case it fluctuates
3. time scan CBPM modules in case timing changed
4. collect 9-point grid in a specific order

Results


1.08
1.06
1.04
1.02
1.00
0.98
0.96
0.94
Gain
21W
46W
37E
31E
25E
20E
CBPM location
bo
ti
to

Additional materials

Try with MC

Fluctuating bunch current

Fluctuating pedestal

60 Hz modulation with random phase

Placeholder