AFE characterization

Antoine

CBPM meeting: October 6, 2023

Setup

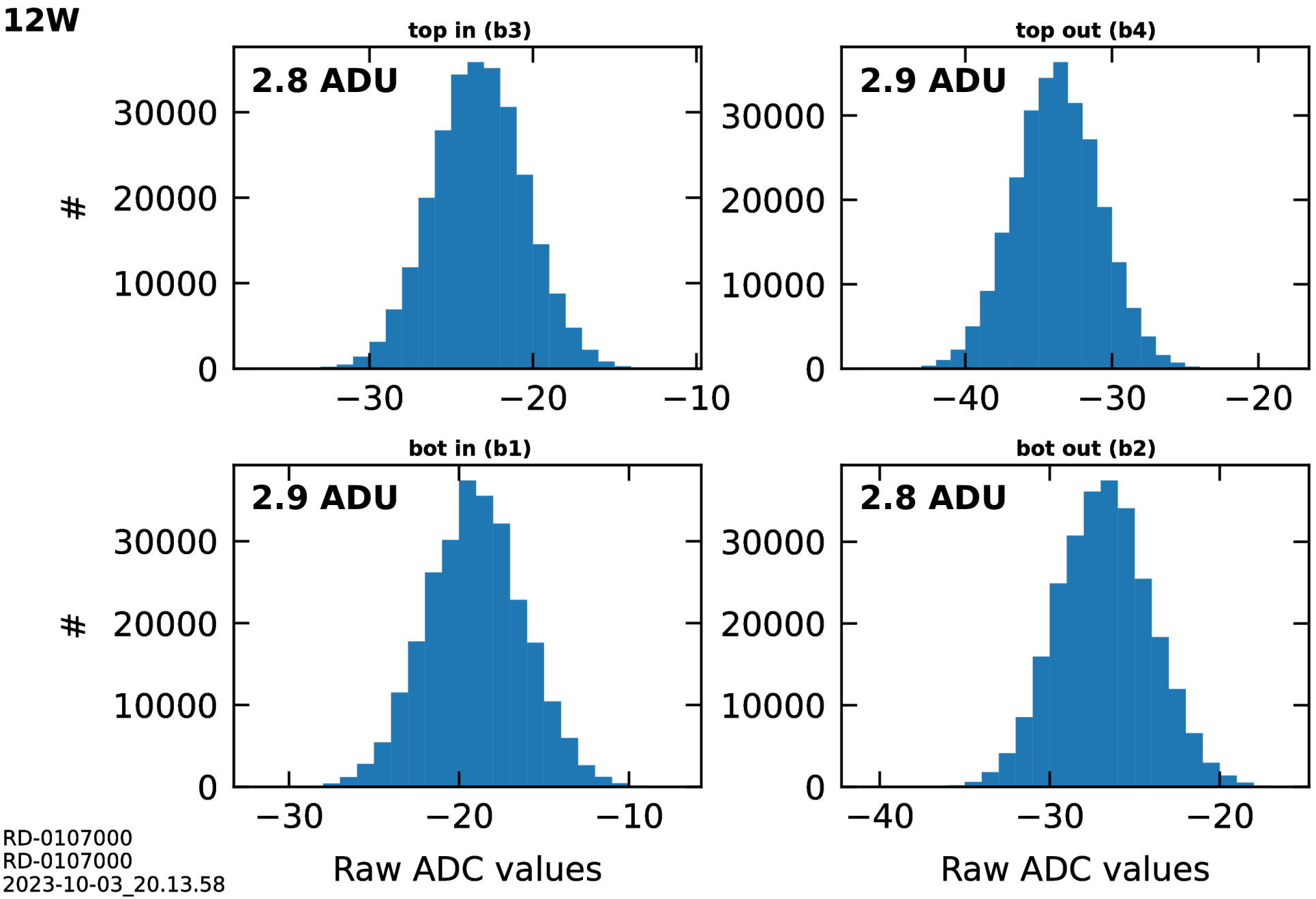
4 AFE cards:

- ✗ without the fixed gain amplifier but,
- ✗ with the diode protection board instead

Difference between the cards is the value of R134 (values to be checked):

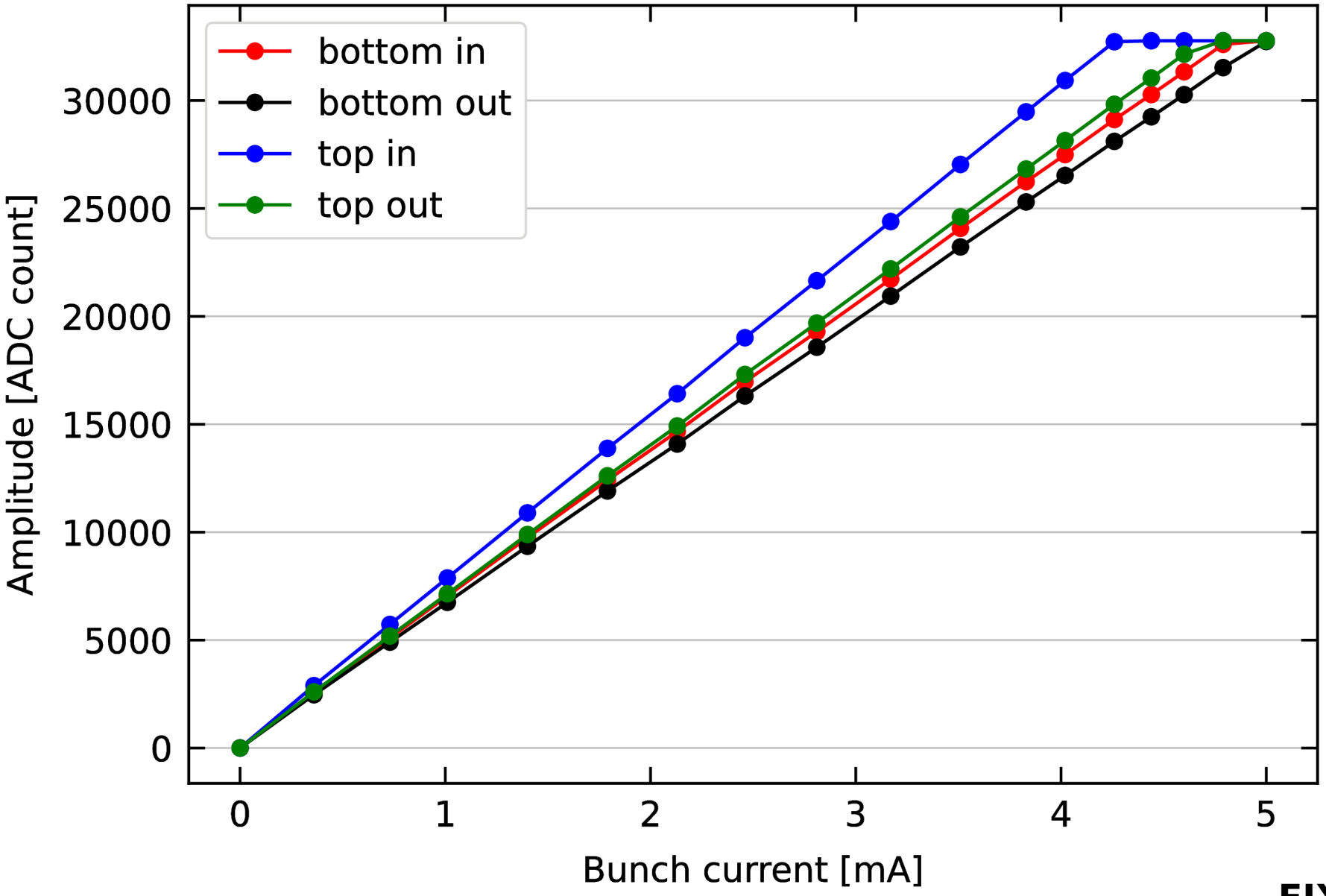
- ✗ bottom in: 0 ohm
- ✗ bottom out: 33
- ✗ top in: 10 ohm
- ✗ top out: 25 ohm

RMS noise


12W
top in (b3)
2.8 ADU
top out (b4)
2.9 ADU
bot in (b1)
2.9 ADU
bot out (b2)
2.8 ADU
#
30000
20000
10000
0
−30
−20
−10
−40
Raw ADC values
RD-0107000
RD-0107000
2023-10-03_20.13.58

Amplitude vs bunch current

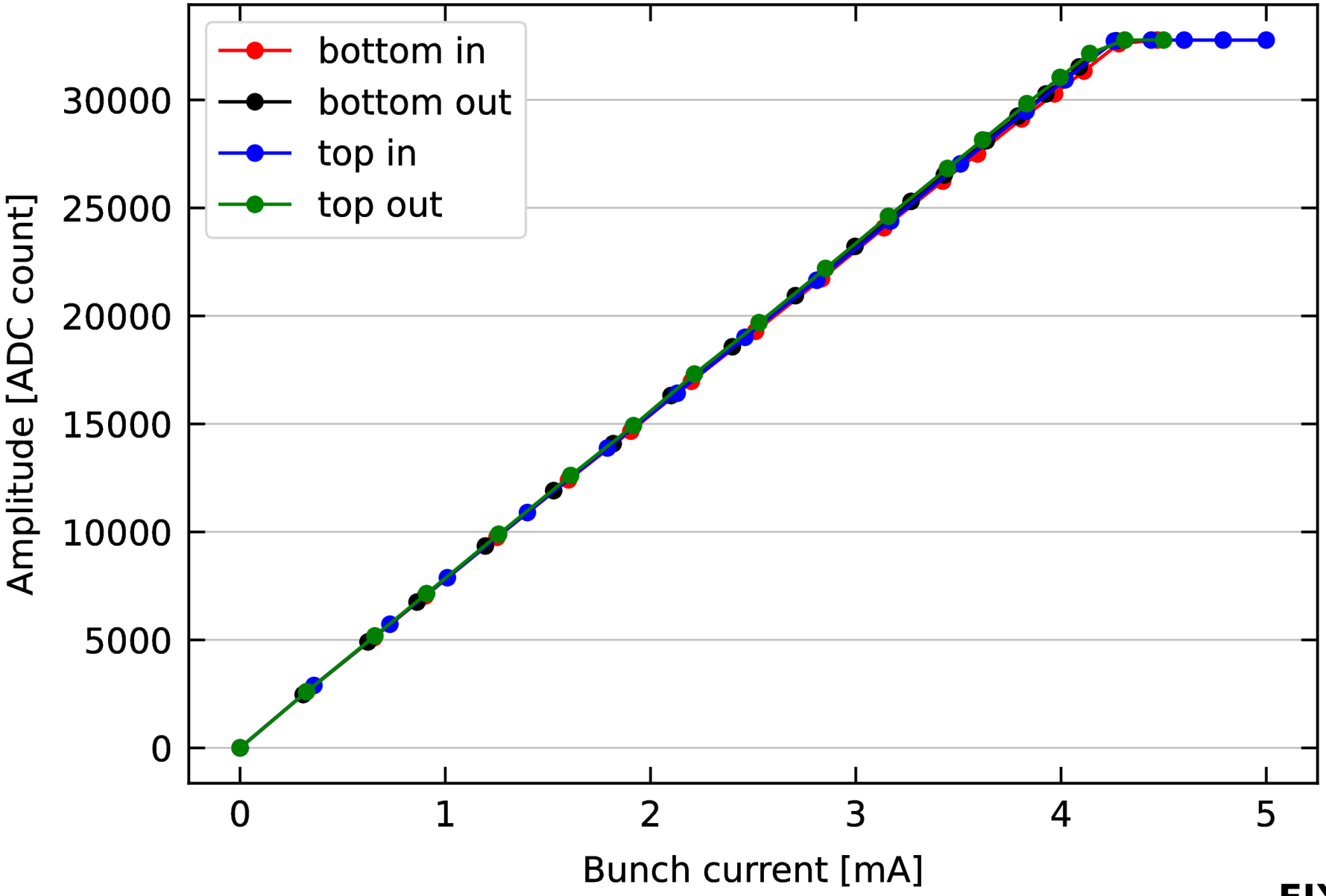
12W (ctactf133), peak-aligned at each current step – Tuesday **10/03**



FIXED GAIN

Amplitude vs bunch current

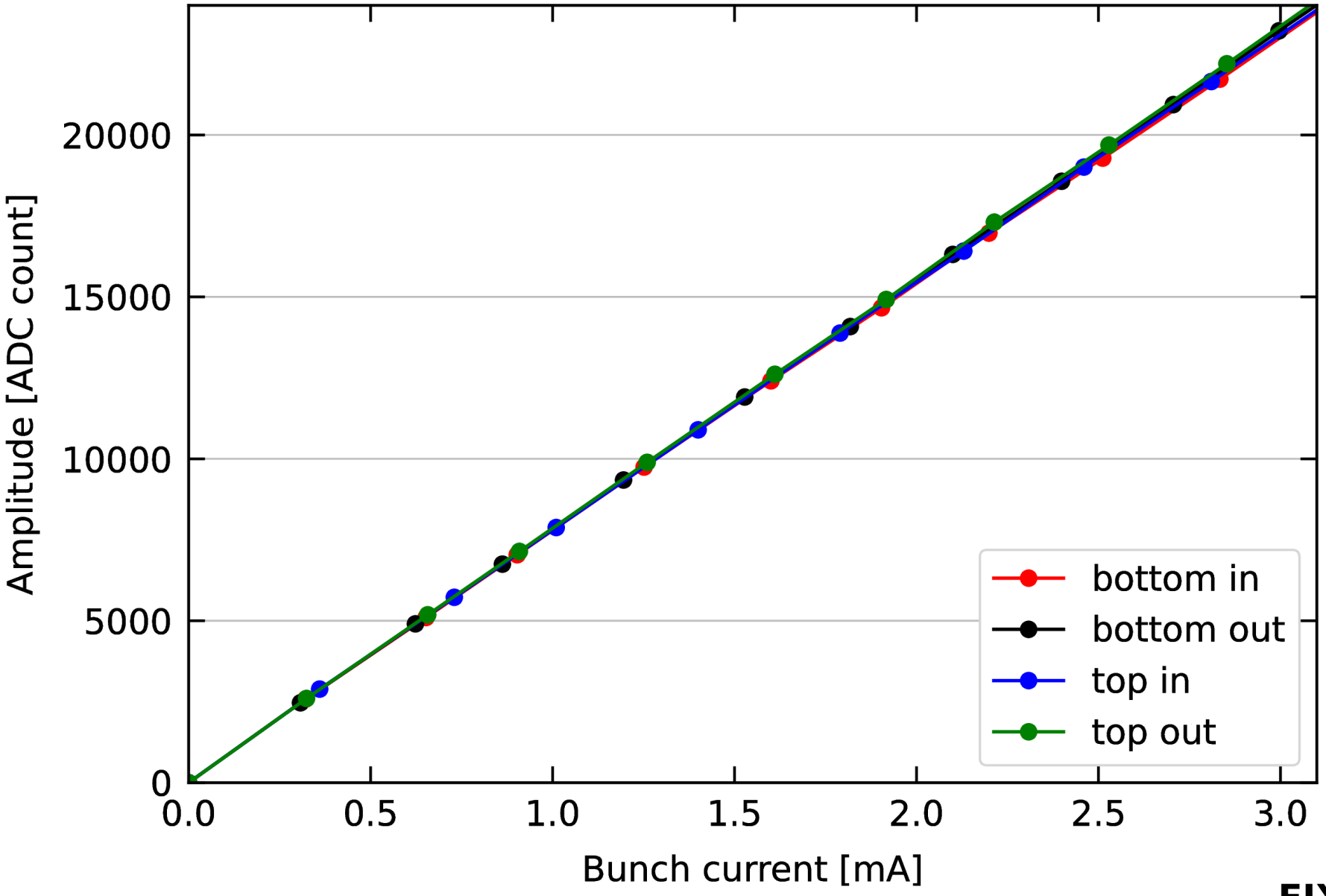
After scaling for the gain difference (from R134) at lowest current



FIXED GAIN

Amplitude vs bunch current

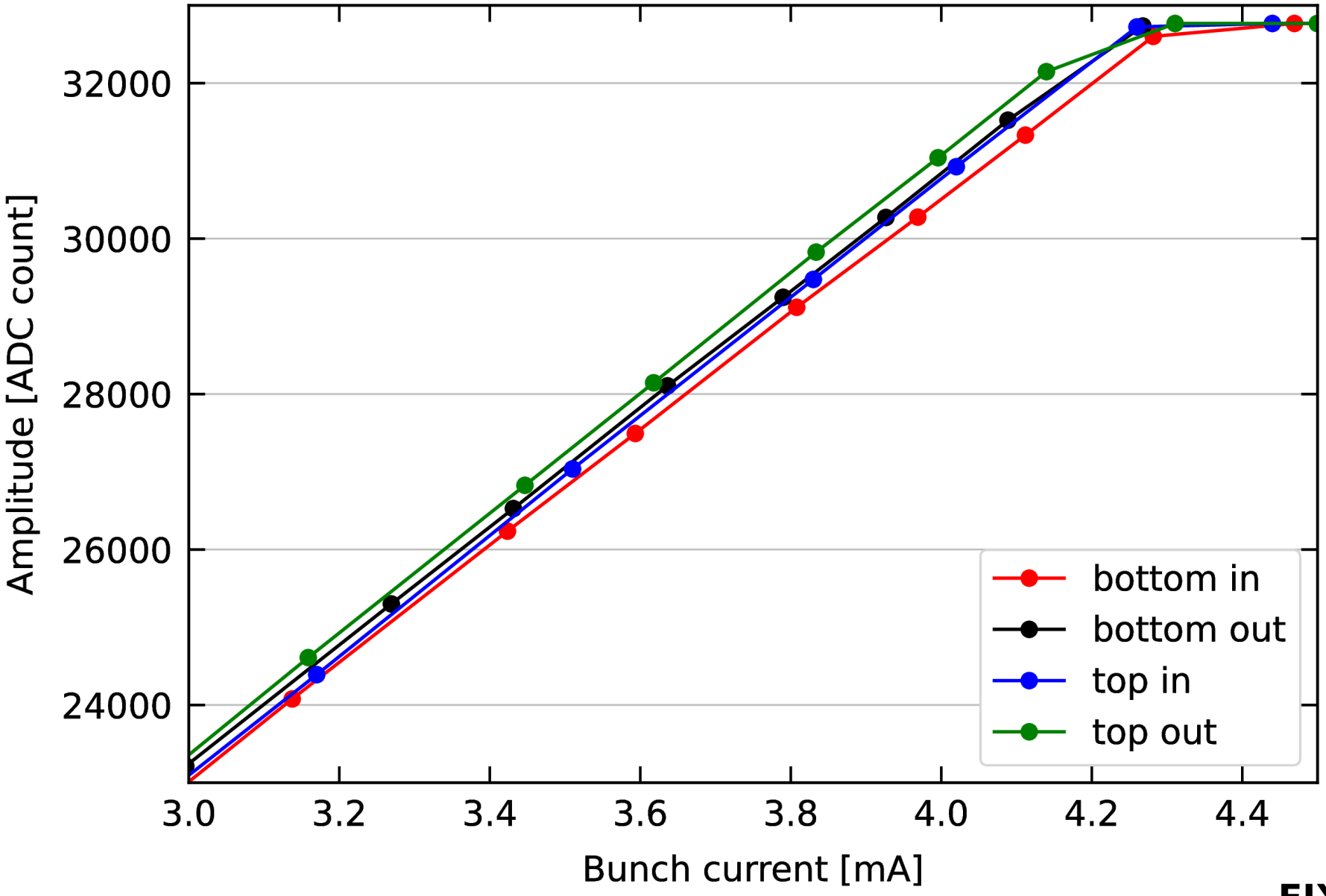
After scaling for the gain difference (from R134): zooming on [0, 3] mA



FIXED GAIN

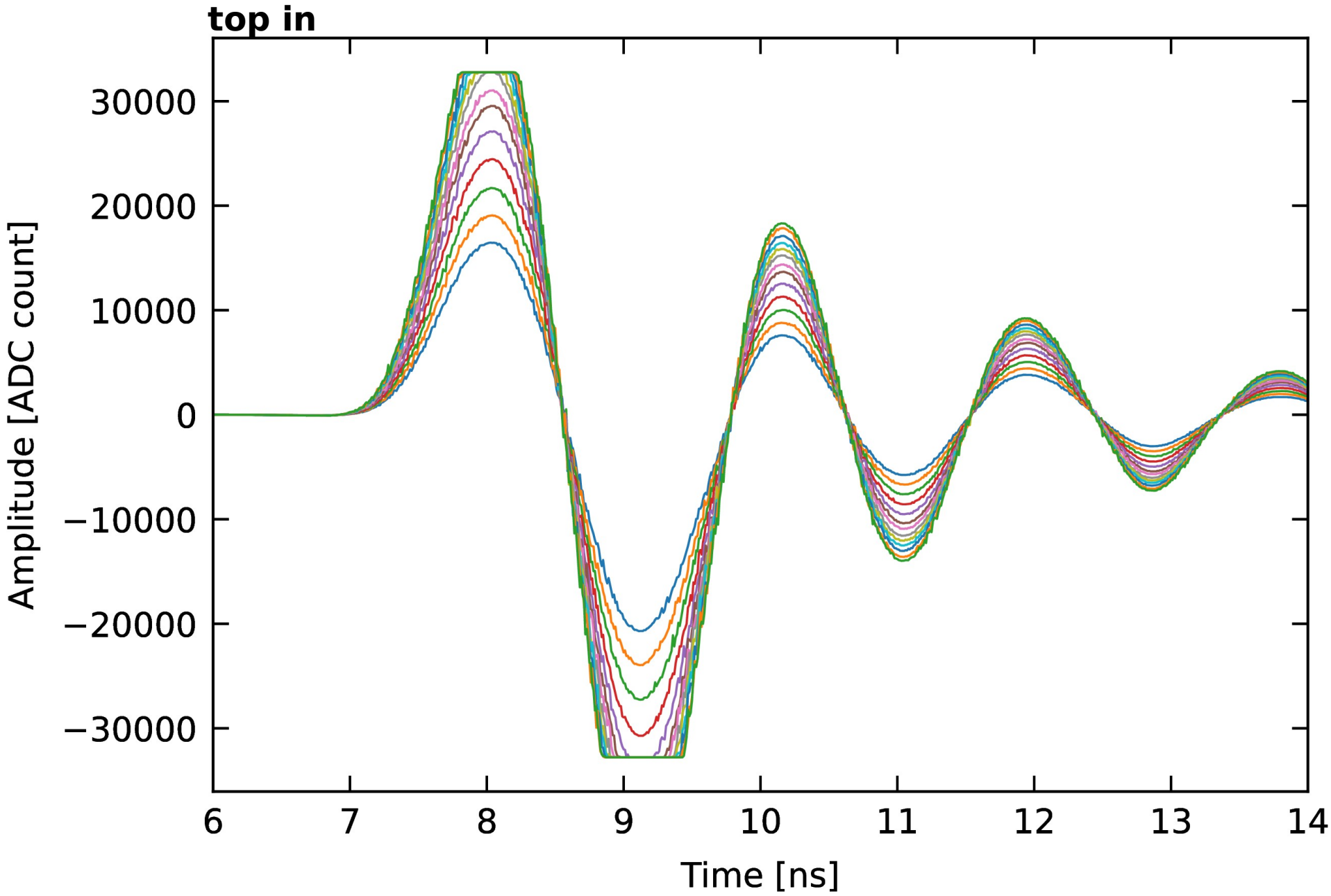
Amplitude vs bunch current

After scaling for the gain difference (from R134): zooming on [3, 5] mA

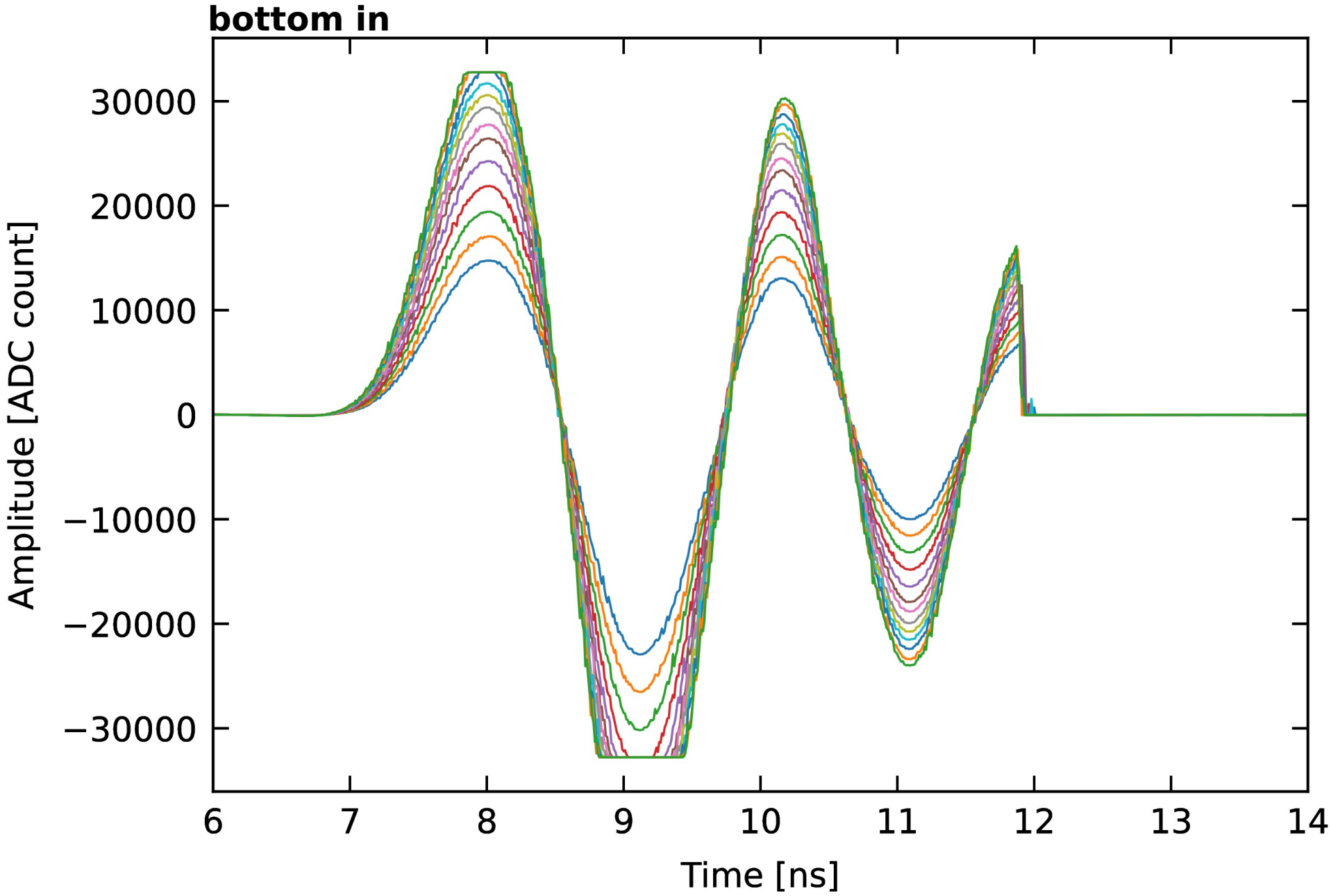


FIXED GAIN

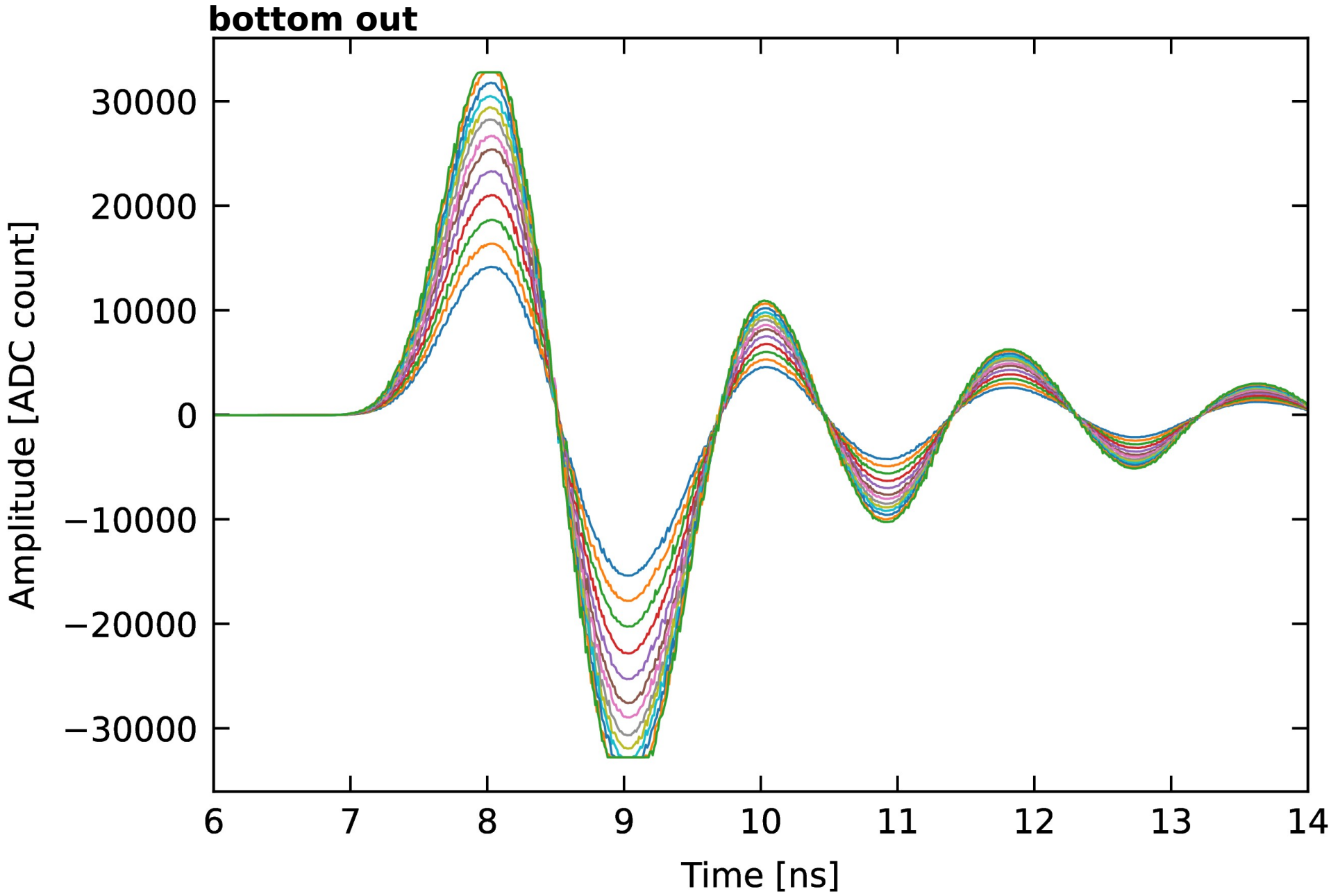
Waveform: 2.1 to 5 mA



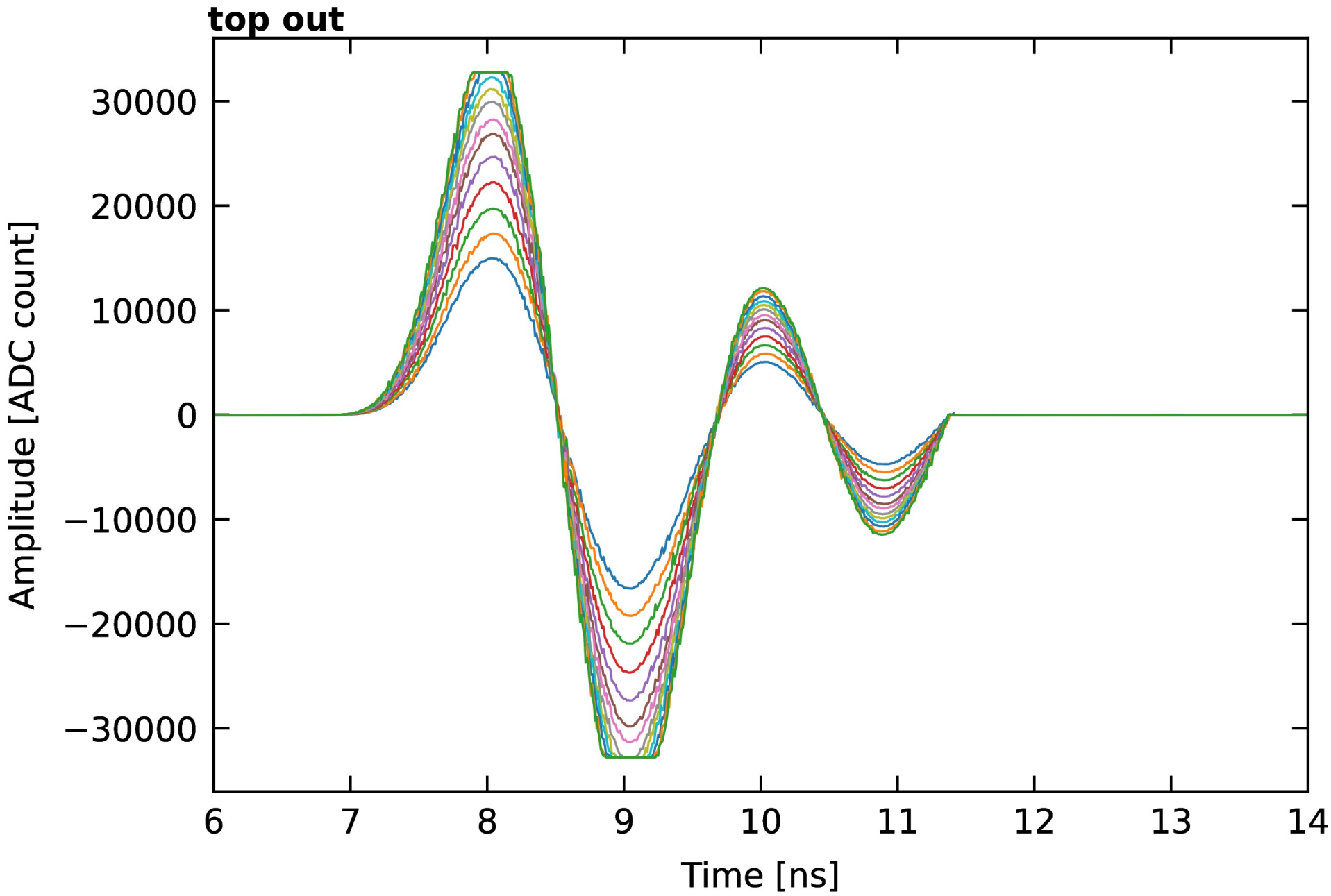
Waveform: 2.1 to 5 mA



Waveform: 2.1 to 5 mA



Waveform: 2.1 to 5 mA



Additional materials