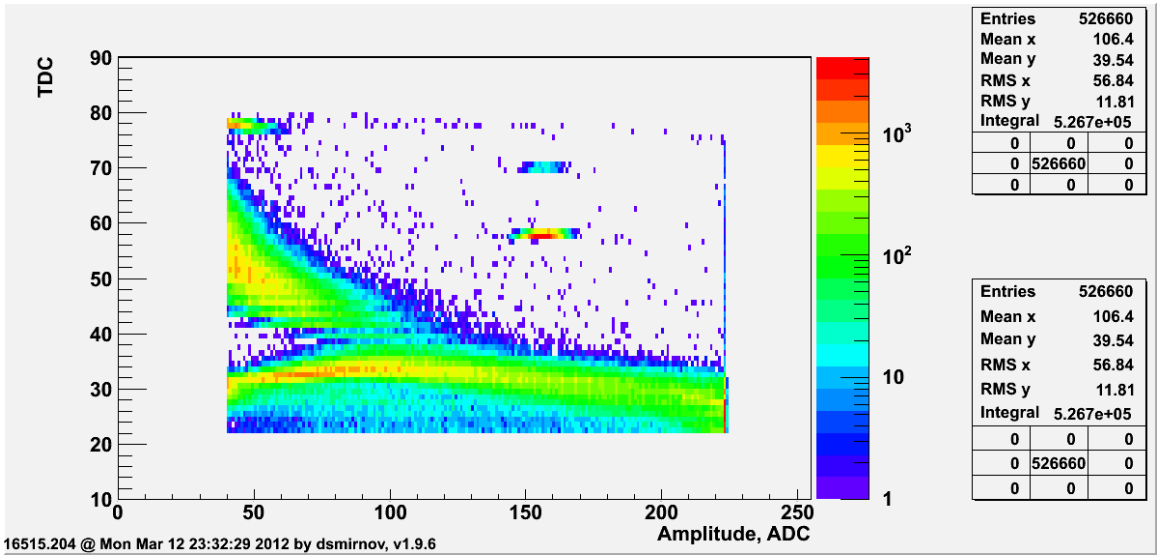
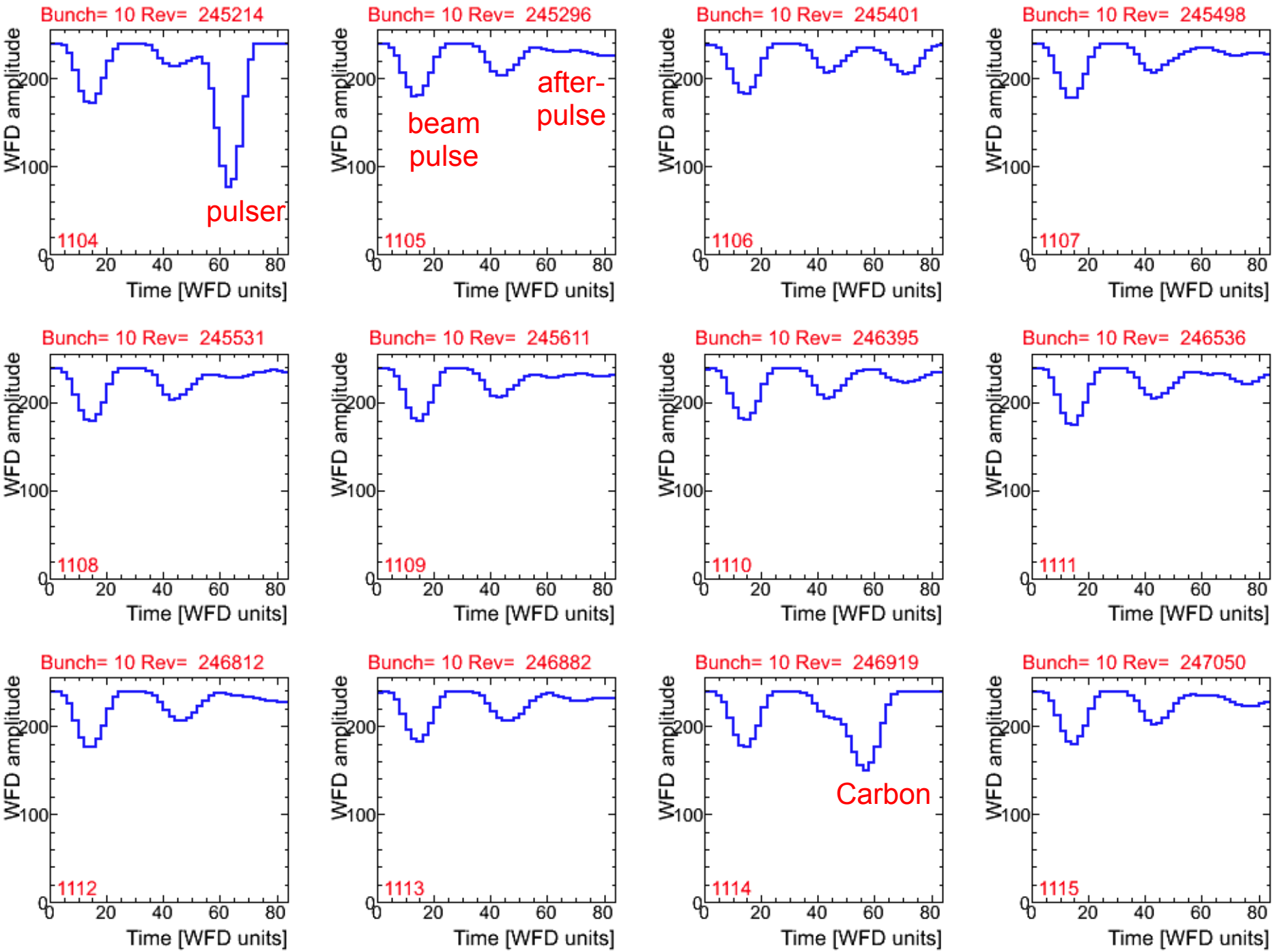
Ham. 'Broken Bananas'

polar. mtg.
21.03.12



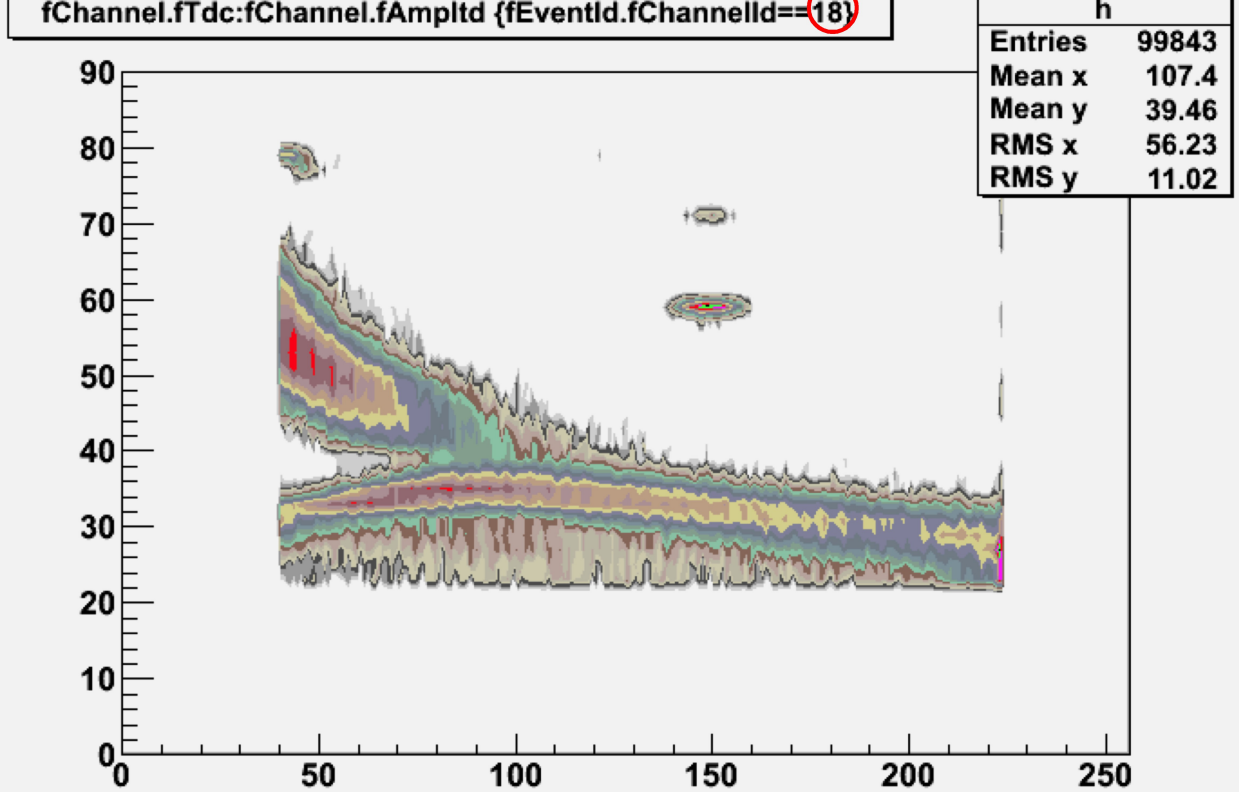
- Waveforms, singe events during fixed target run:
  beam pulse, after-pulse
- Time reconstruction:
  - Tdc, from constant fraction discriminator (CFD)
  - TdcAMax, from pulse peak sample

Run=16525.0 Det=1 Strip=17

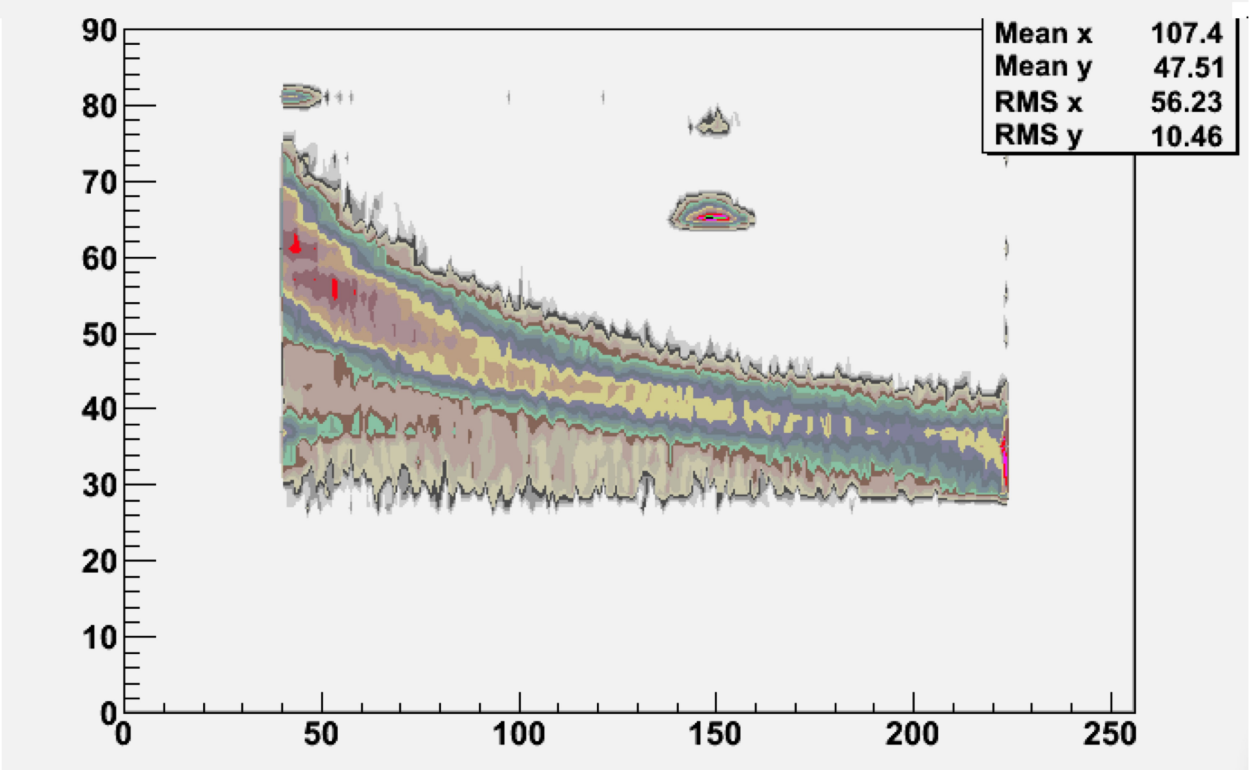


Time reconstruction

- Tdc from CFD:
  - extrapolates back from pulse peak to ¼ full amplitude
  - digitized in Tdc units = 1.2 nS, ½ of sample spacing
  - can be distorted by overlapping pulses
- TdcAmax:
  - time of peak amplitude sample
  - digitized in 2×Tdc units = 2.4 nS, sample spacing
  - less distorted by overlapping pulses
- Alternative banana plot: Tdc vs. Amp → TdcAMax vs. Amp



- Tdc vs. Amp
- broken banana



- TdcAMax vs. Amp
- ~continuous banana

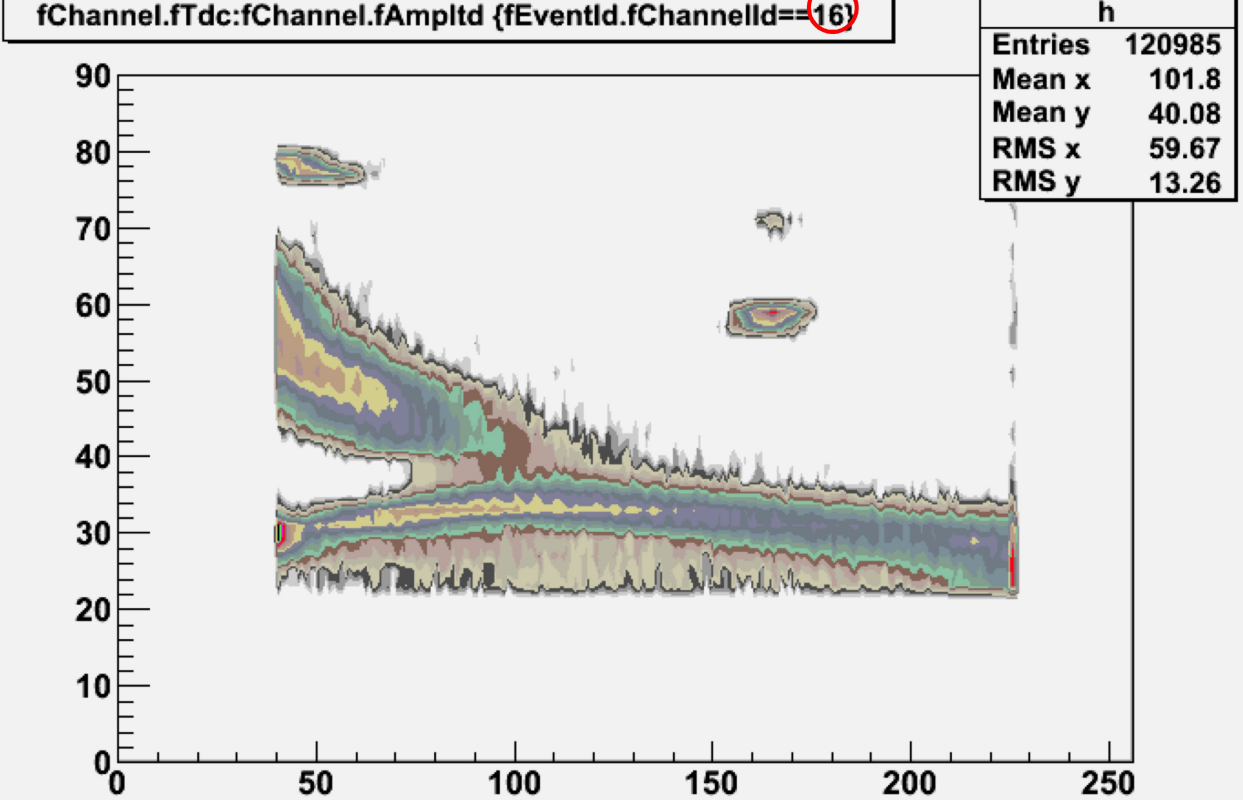
Summary

- Using TdcAMax gives ~continuous banana
  - chance to do calib. fit to T vs. Amp
- Amplitudes near after-pulse in time distorted
  - calibration can account for

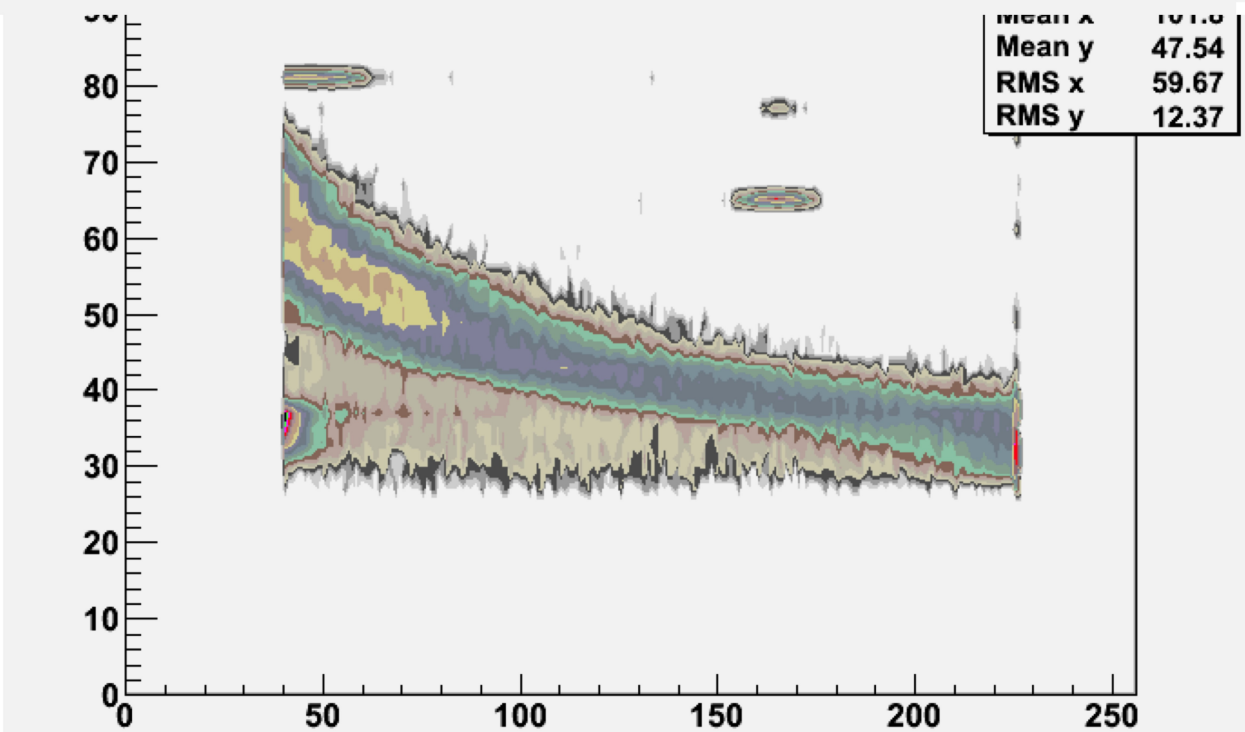
Further study:

- I've looked by hand at a few runs/channels, similar conclusions
- Would be nice to have raw data TdcAMax vs. Amp plots on a data base extra page, look at lots of data
- Try basic calibration fit T(Amp)

Extras

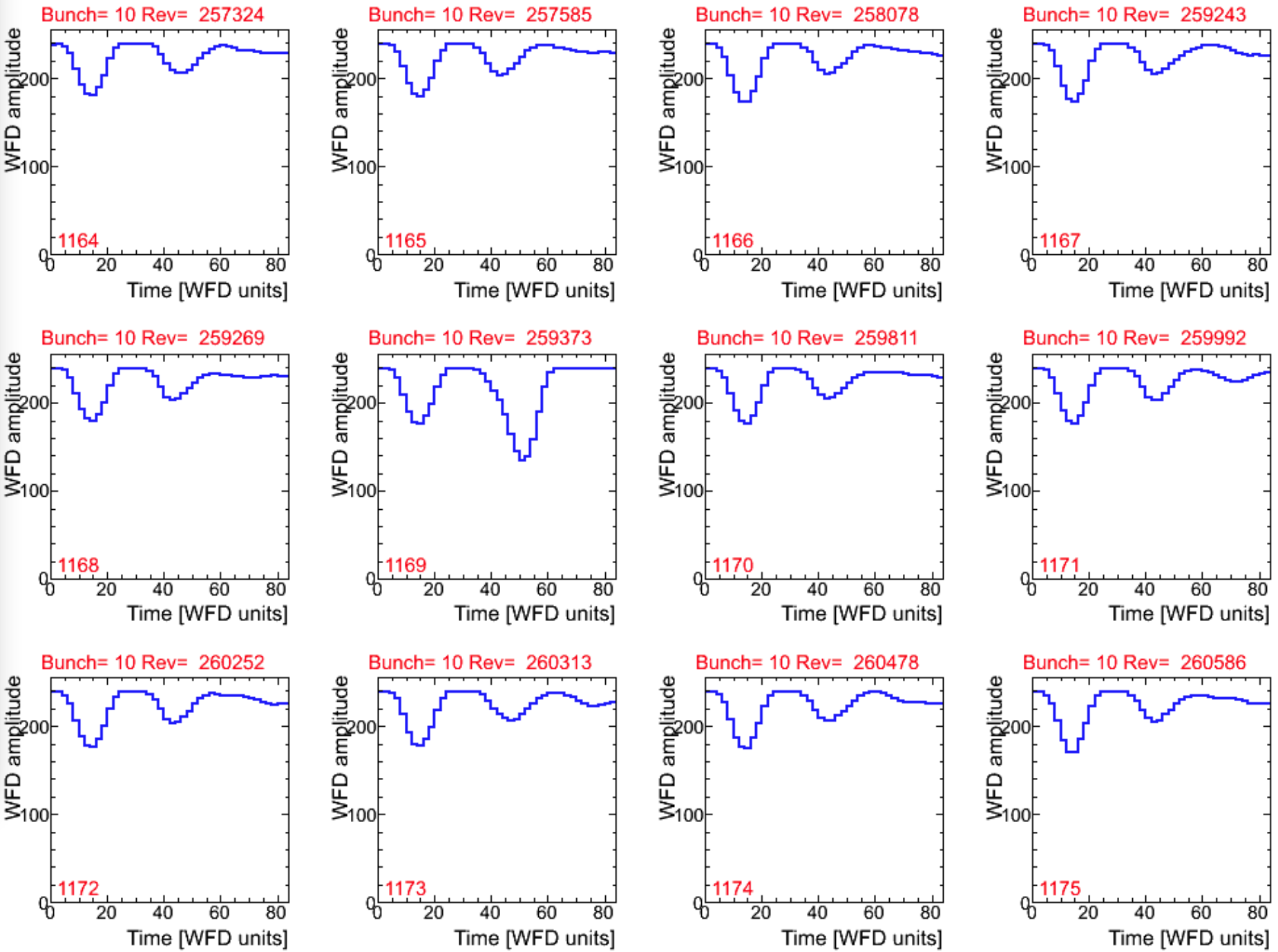


- Tdc vs. Amp
- broken banana



- TdcAMax vs. Amp
- ~continuous banana

Run=16525.0 Det=1 Strip=17



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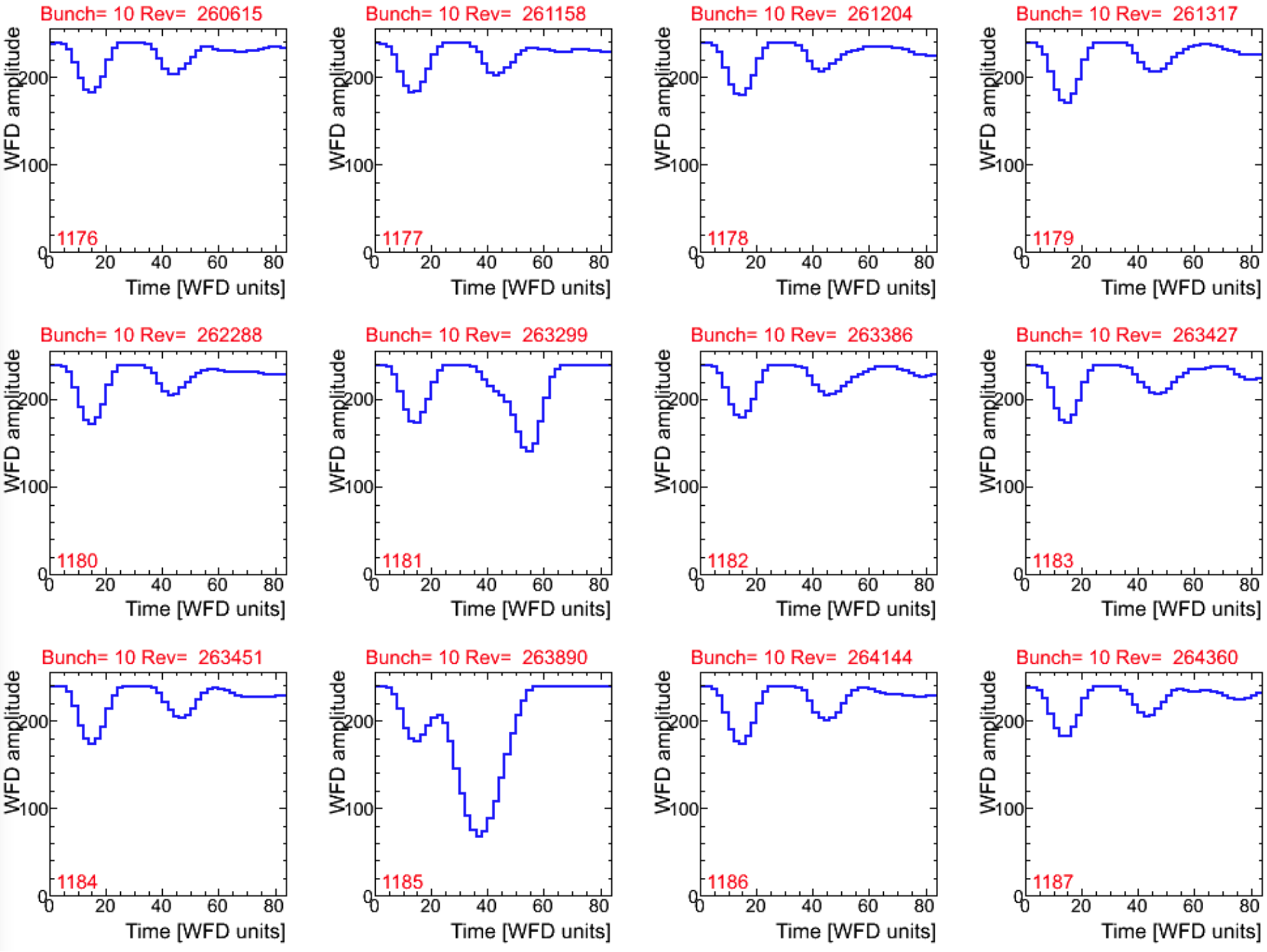

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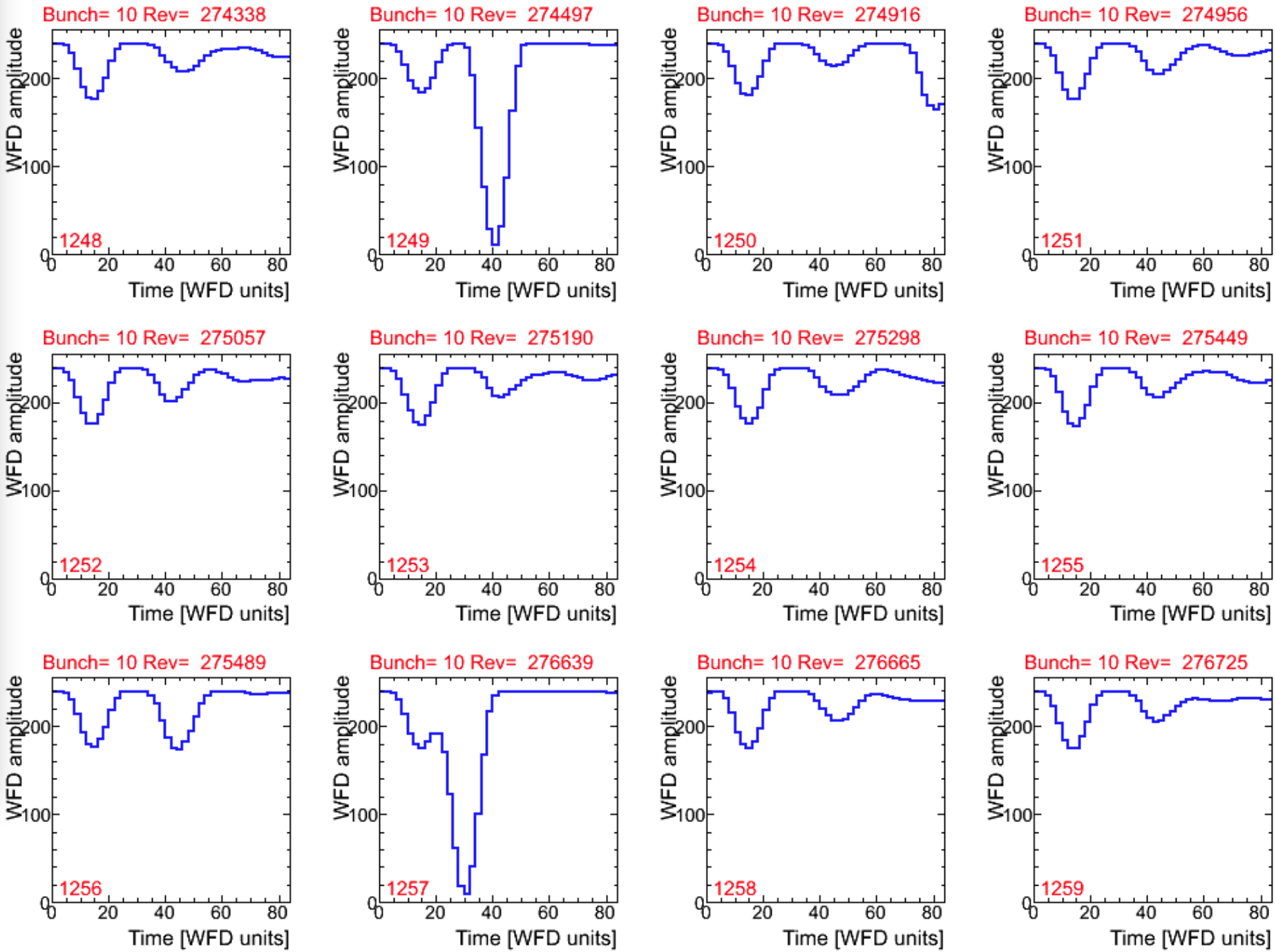
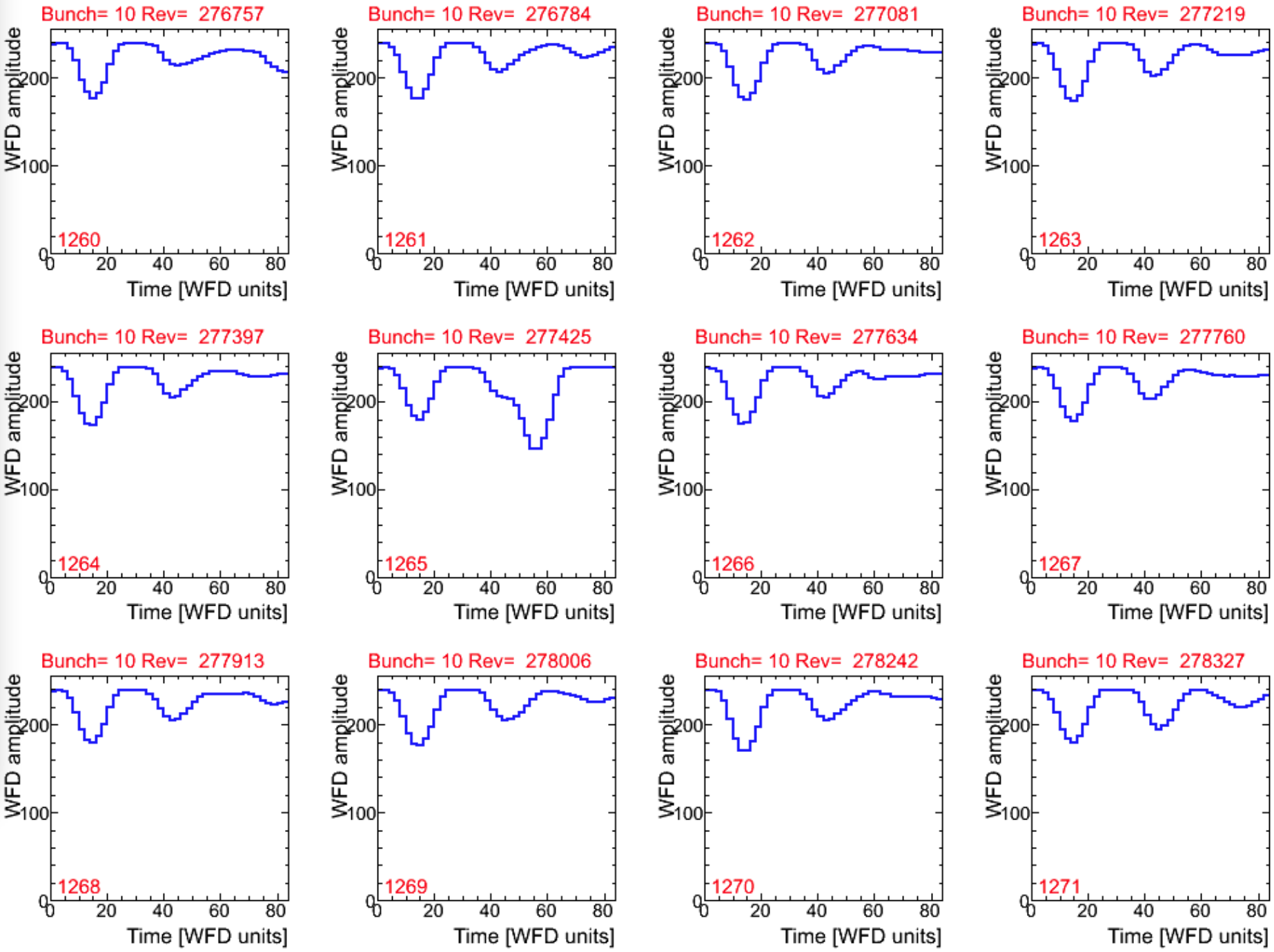
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