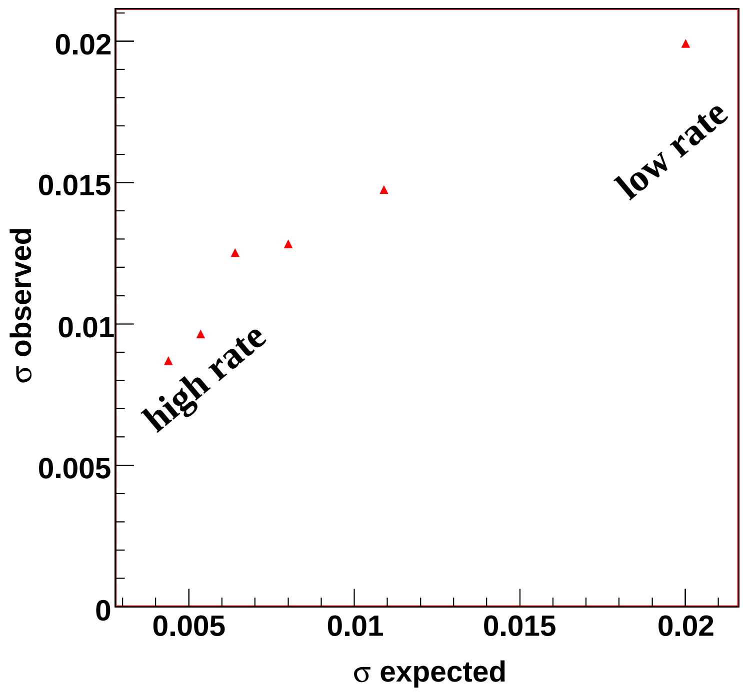


Figure 1: Without RC-circuit. Expected and observed width of the electron signal (30 ns path). The expected width is given as $1.0/\sqrt{RT}$ where R is total number of pulses in the pair of helicity windows and T is the integration time for these pair of windows.

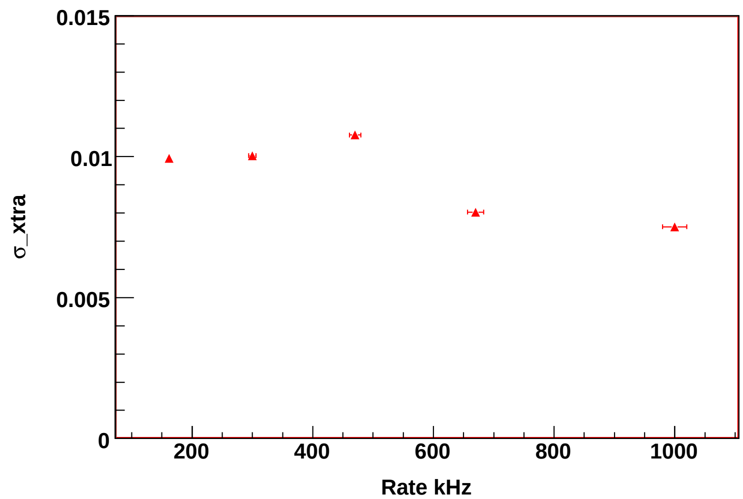


Figure 2: Without RC-circuit. Here the term σ_{xtra} is given as $\sigma_{xtra} = \sqrt{\sigma_{obs} * \sigma_{obs} - \sigma_{expected} * \sigma_{expected}}$.

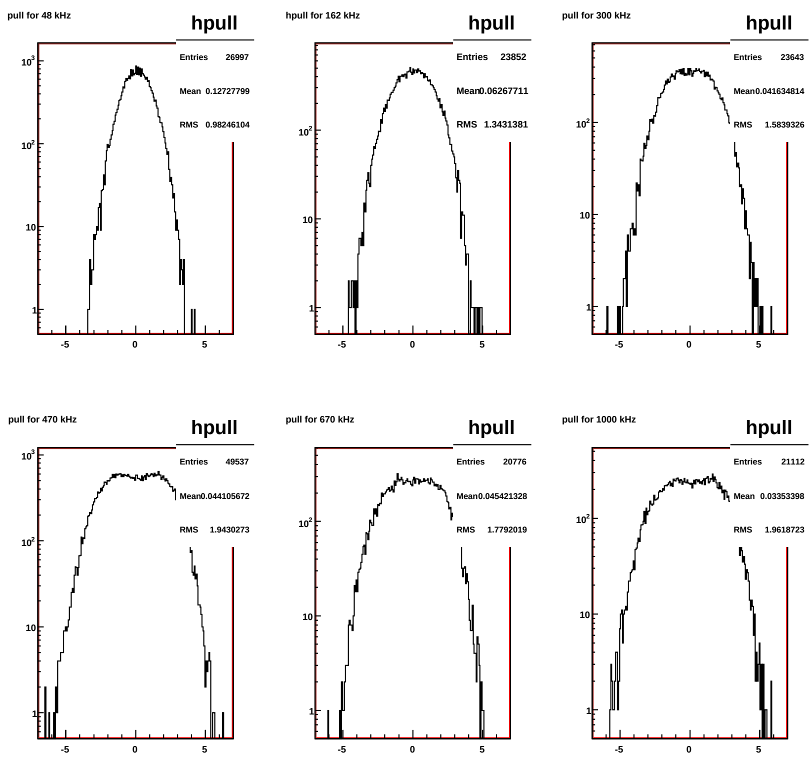


Figure 3: Without RC-circuit. The "pull" result. The term "pull" is given as $\frac{A-A_{expected}}{\sigma_A}$ where A is an asymmetry and σ_A is the width of the asymmetry. The idea was to see the histogram for the "pull" to have a mean of 0.0 and an RMS of 1.0. This is the result from the data with narrow path (30 ns).

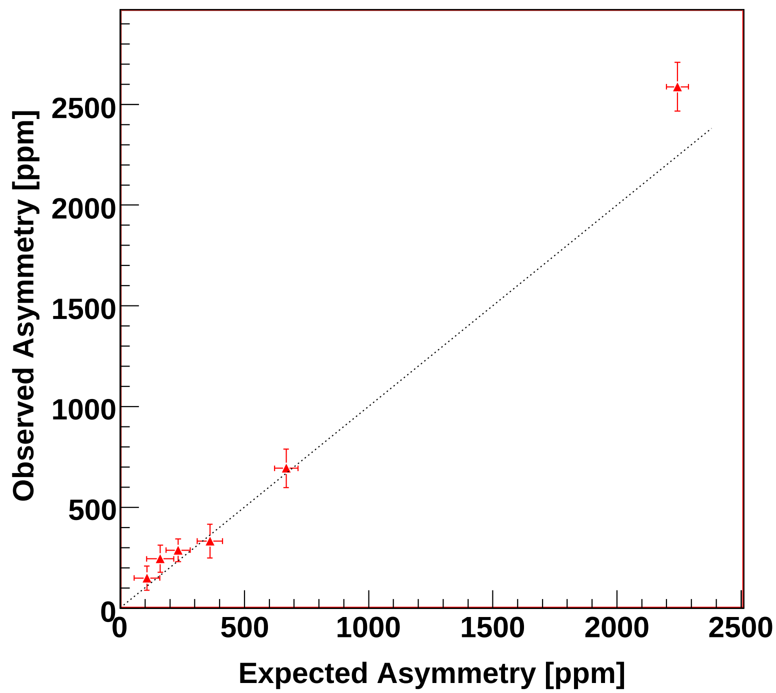


Figure 4: Without RC-circuit. The electron narrow signal (30 ns) asymmetry.

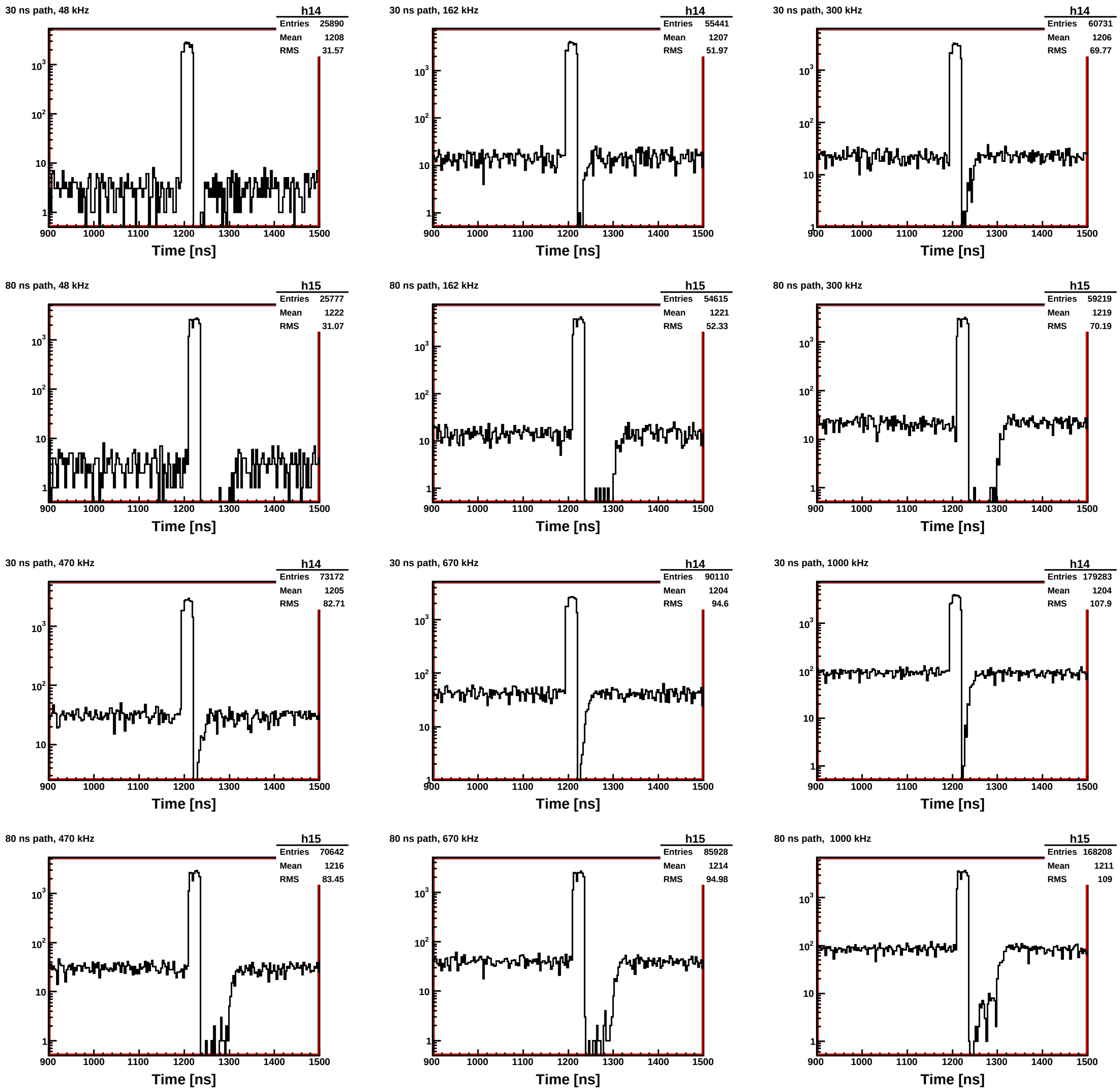


Figure 5: Without RC-circuit. TDC spectra showing dead-zones at various rates for 30 ns and 80 ns paths.

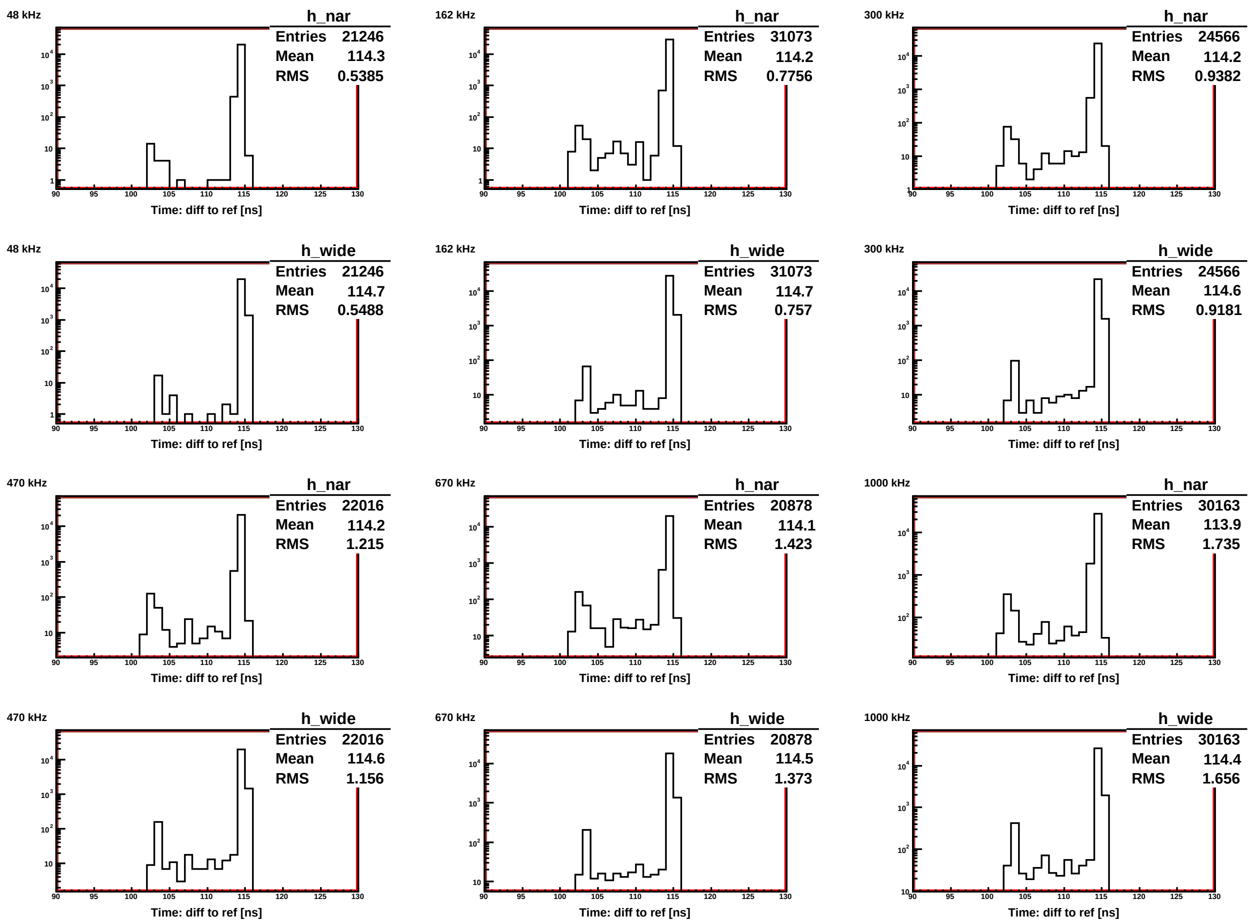


Figure 6: Without RC-circuit. Pileup plots with 10 ns delay between the tagger and the PVDIS-trigger, tagger being early. This is the result from the data with narrow path as 30 ns and wide path as 80 ns.

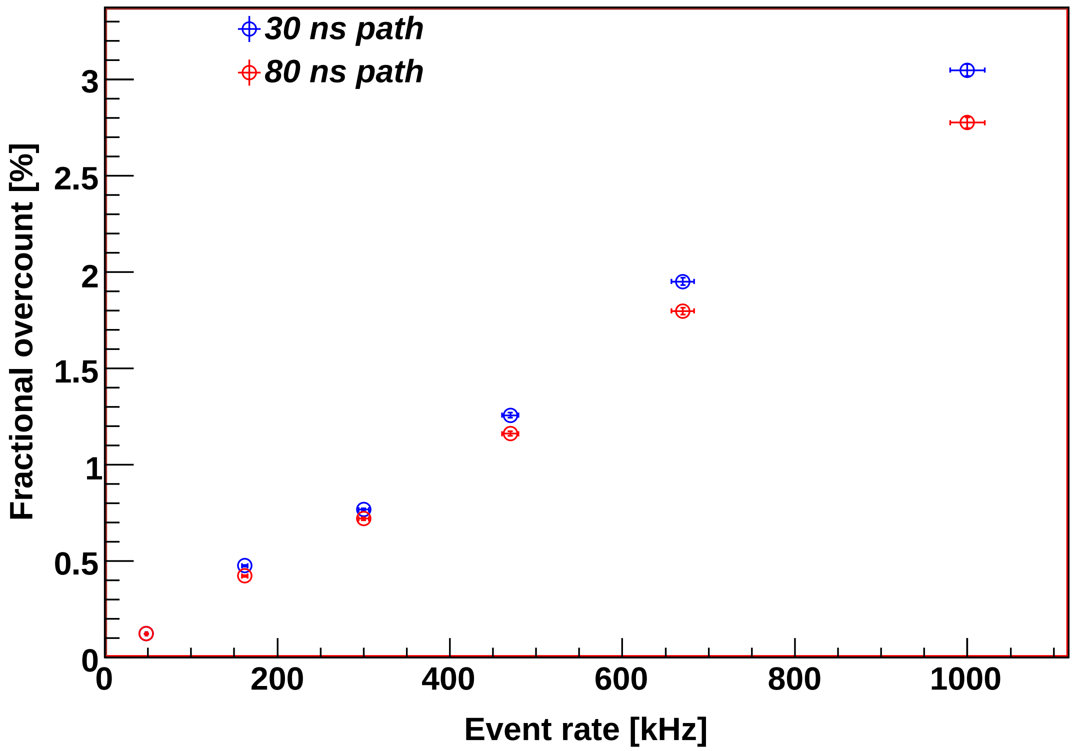


Figure 7: Without RC-circuit. Pileup result using TDC. This result is from the data with narrow path as 30 ns and wide path as 80 ns. The PVDIS-trigger was delayed by 10 ns compared to the tagger in the ANDing module.

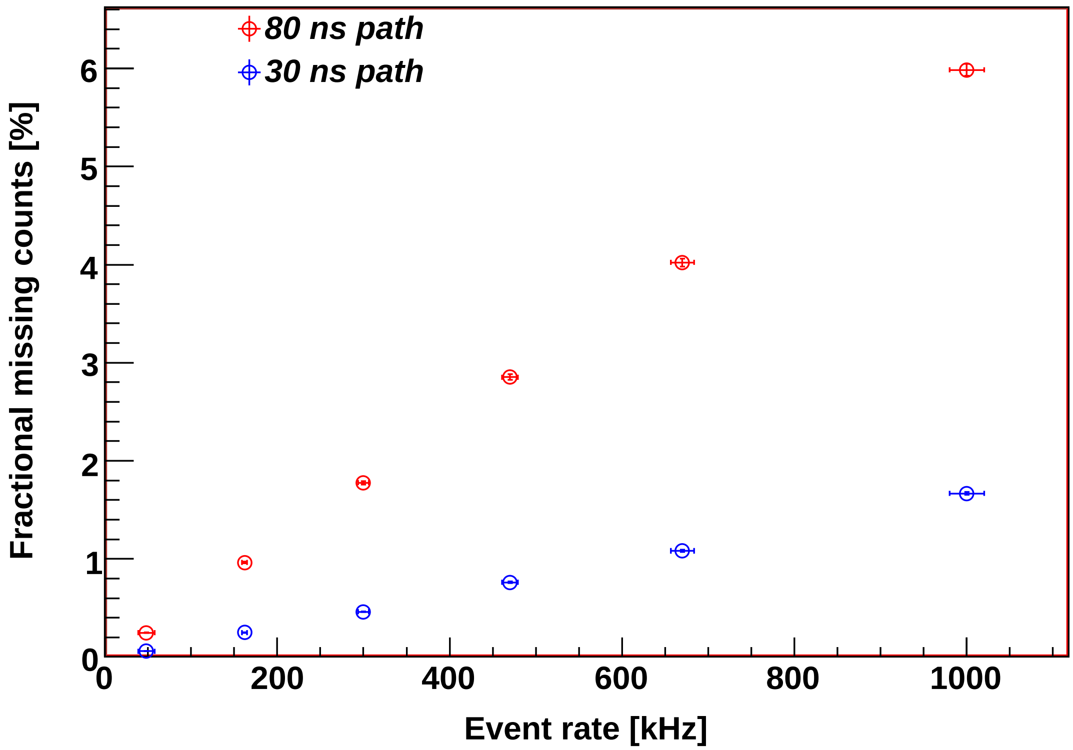


Figure 8: Without RC-circuit. Fractional count loss plot using scaler data. The fractional missing count is computed from $\frac{tagger - signal}{signal}$ for the narrow and wide paths using scaler-data. This is the result from the data with narrow path as 30 ns and wide path as 80 ns.

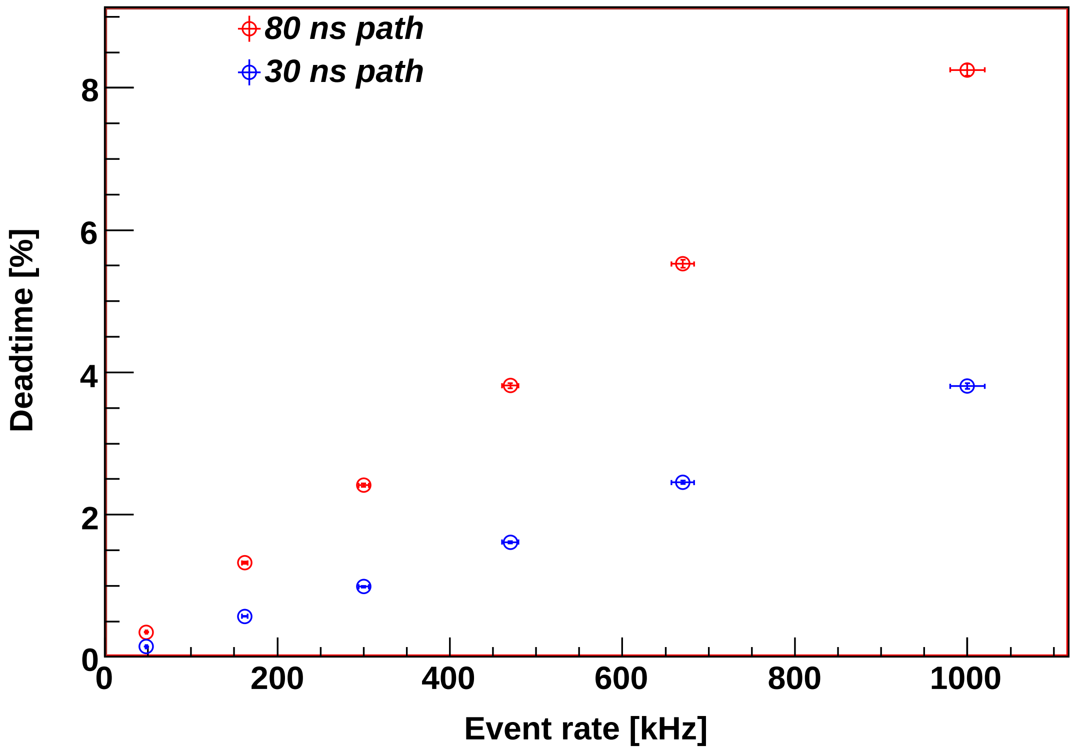


Figure 9: Without RC-circuit. Deadtime plot by taking into account of the TDC data and the scaler data. The deadtime of 30 ns and 80 ns paths apear to be 30 ns and 80 ns, respectively. This is obtained from the slopes of the narrow and wide path traces which give 30 ns 80 ns deadtime for the narrow and wide paths, respectively; and this is an expected result.

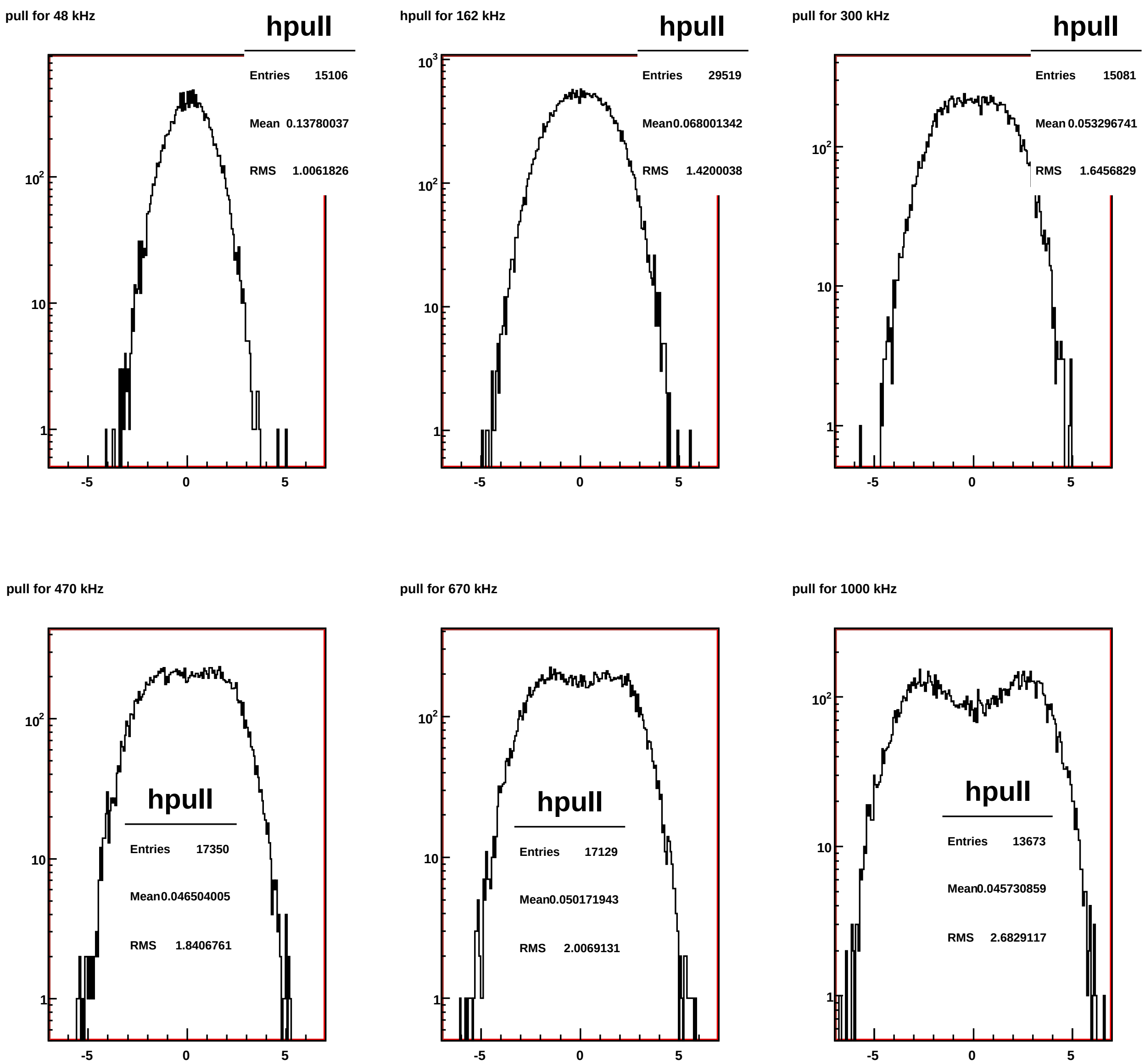


Figure 10: With RC-circuit. The "pull" result. The signal, after the RC-circuit, gets amplified 15-times. That may be the reason we see two little bumps when we go to a high rate. Actully they do exist in the case of low rates too, but in a diminished form. This is the result from the data with narrow path (30 ns).

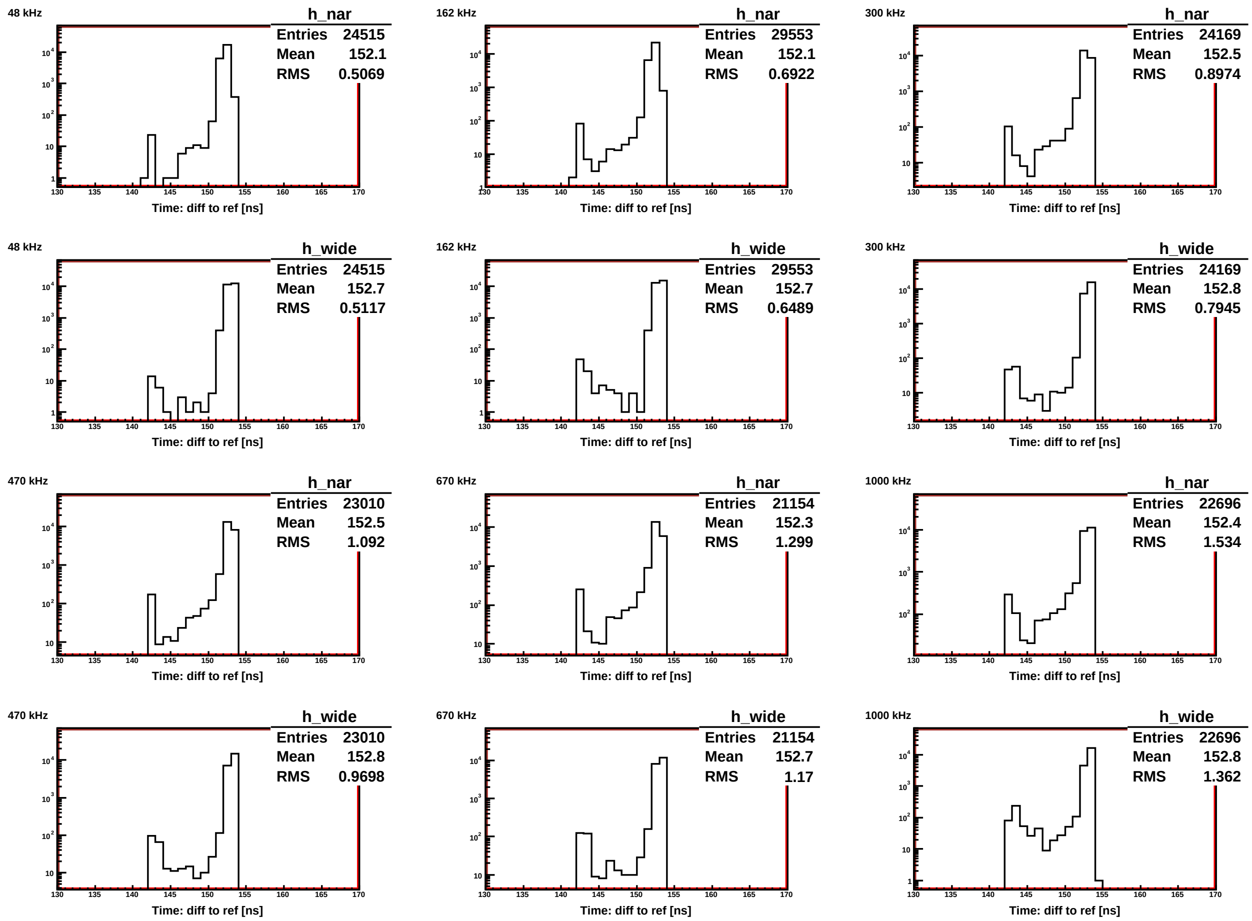


Figure 11: With RC-circuit. Pileup plots using TDC with 10 ns delay between the tagger and the PVDIS-trigger, tagger being early. This is the result from the data with narrow path as 30 ns and wide path as 80 ns.

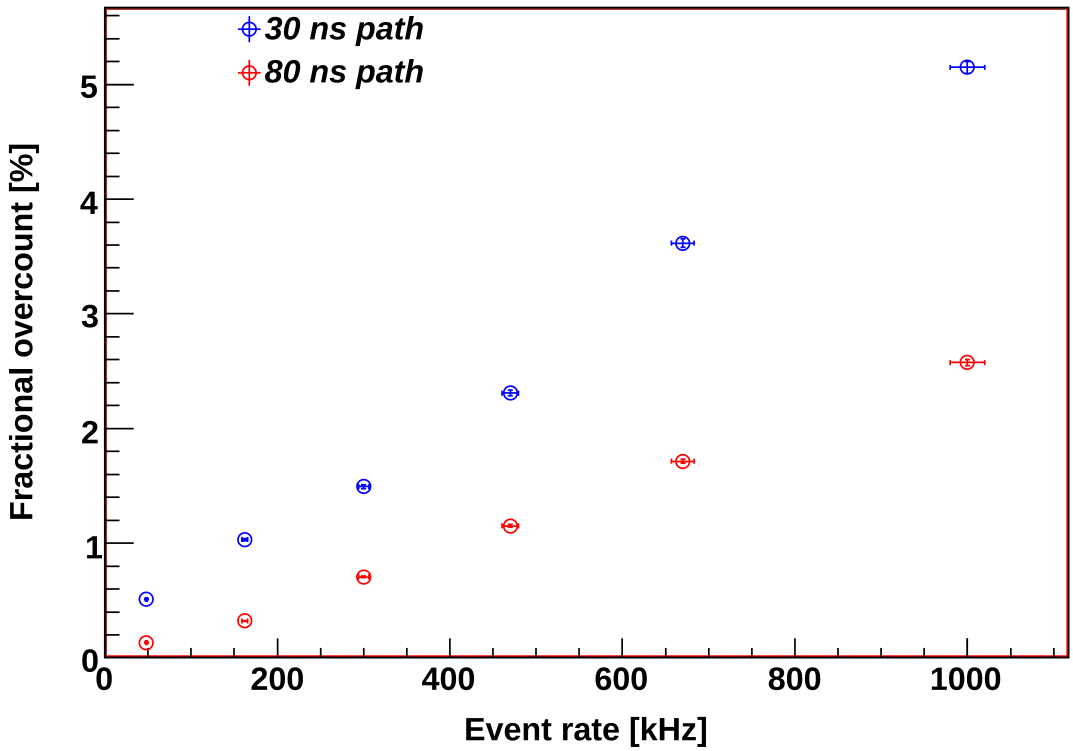


Figure 12: With RC-circuit. Pileup result using TDC. This is the result from the data with narrow path as 30 ns and wide path as 80 ns.

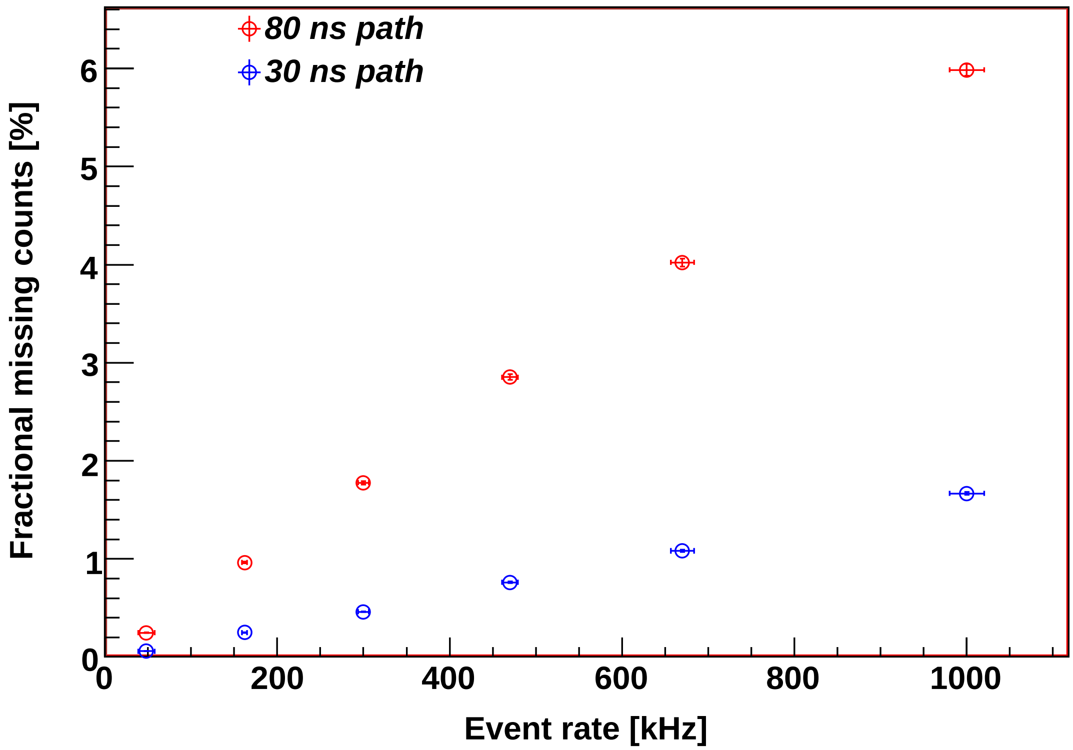


Figure 13: With RC-circuit. Fractional count loss plot using scaler data. The fractional missing count is computed from $\frac{tagger-signal}{signal}$ for the narrow and wide paths using scaler-data. This is the result from the data with narrow path as 30 ns and wide path as 80 ns.

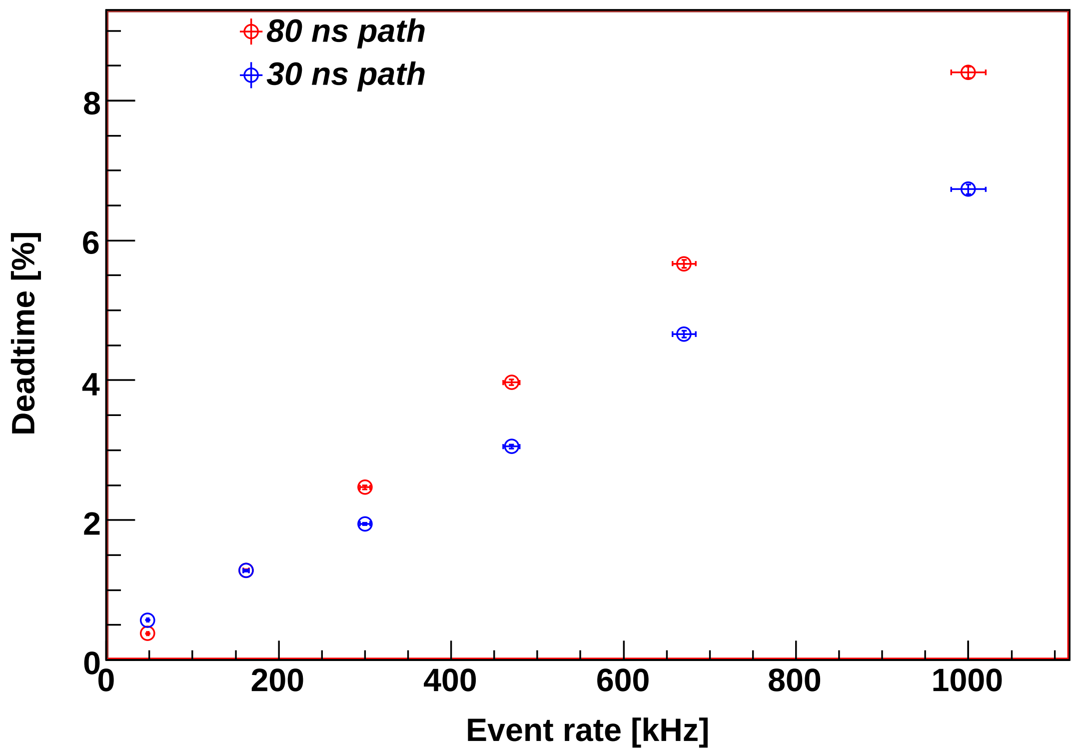
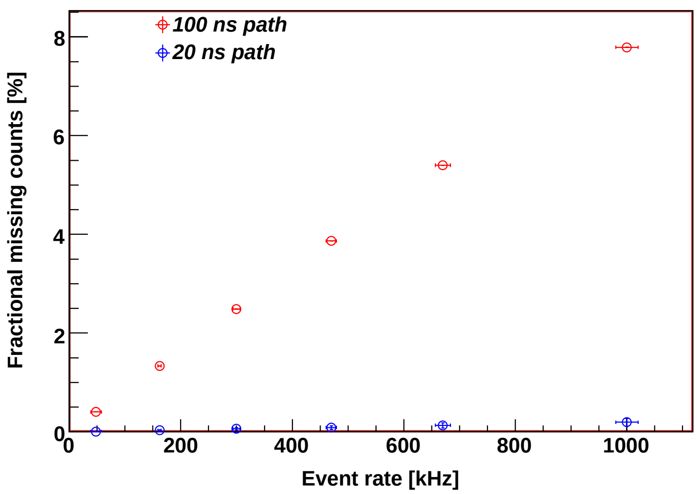


Figure 14: With RC-circuit. Deadtime plot by taking into account of the TDC data and the scaler data. The deadtime of 80 ns path apears to be 80 ns since the slope of the wide path trace gives 80 ns deadtime, and this is an expected result. For some reason, the deadtime of the 30 ns path appears to be about 68 ns. This is the result from the data with narrow path as 30 ns and wide path as 80 ns.



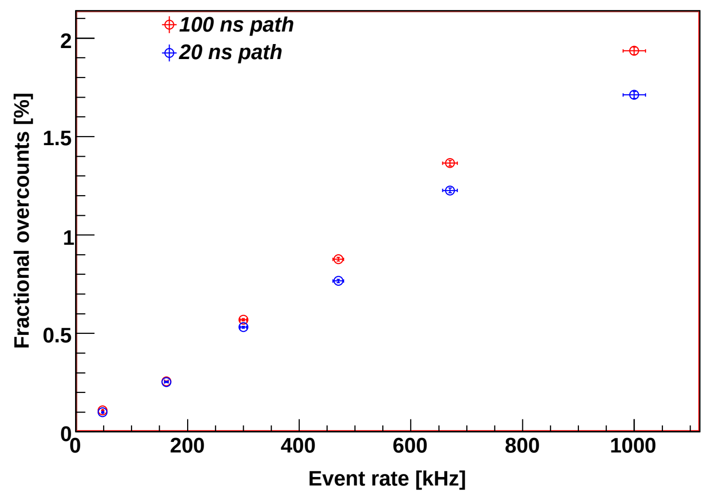


Figure 15: Without RC-circuit. The PVDIS-trigger was delayed by 5 ns compared to the tagger in the ANDing module. We did not have asymmetry module plugged in for this figure and for the figures below. Left: The fractional missing counts versus random-rate plots. The fractional missing count is computed from $\frac{tagger-signal}{signal}$ for the narrow and wide paths using scaler-data. Right: The fractional overcount as a function of random-rate. This is obtained by using TDC-data.

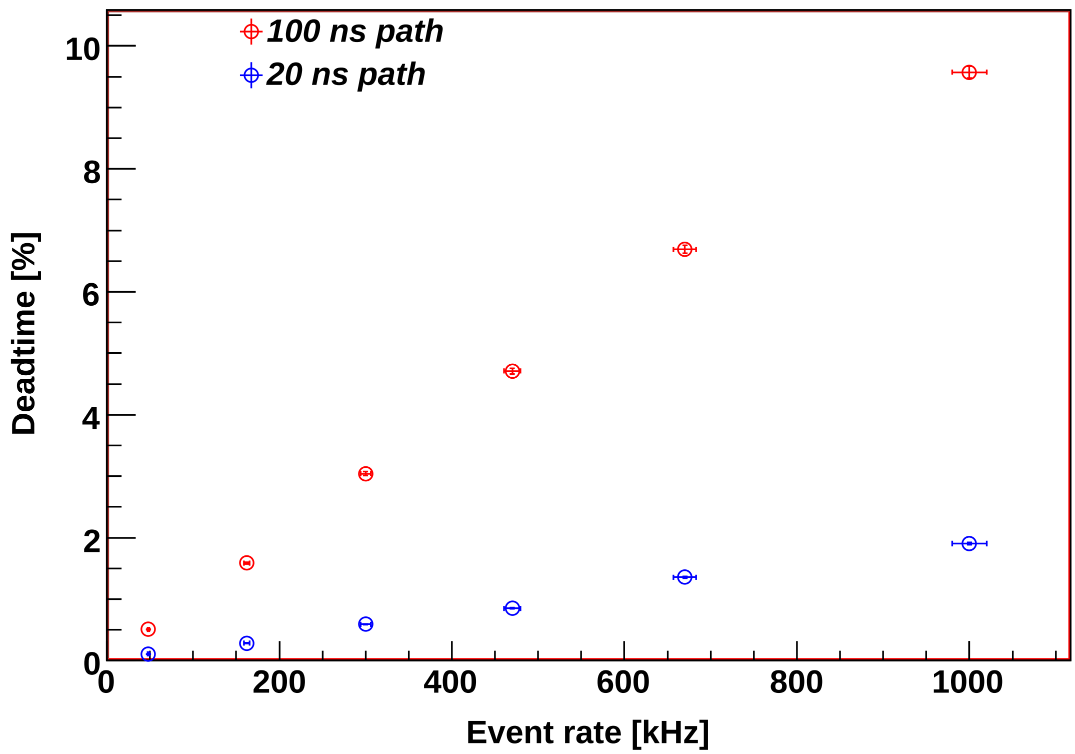


Figure 16: Without RC-circuit. The deadtime as a function of random-rate. The deadtime in this case is obtained from $\frac{tagger-signal\ (1-pileup)}{tagger}$ using both the scaler-data and the TDC-data. Here the pileup is the fractional overcount obtained from the TDC-data. The slope of red-points is about 100 ns and that of blue-points is about 20 ns. The deadtime of 100 ns path is about five times higher than that of 20 ns path. This is what we expect.

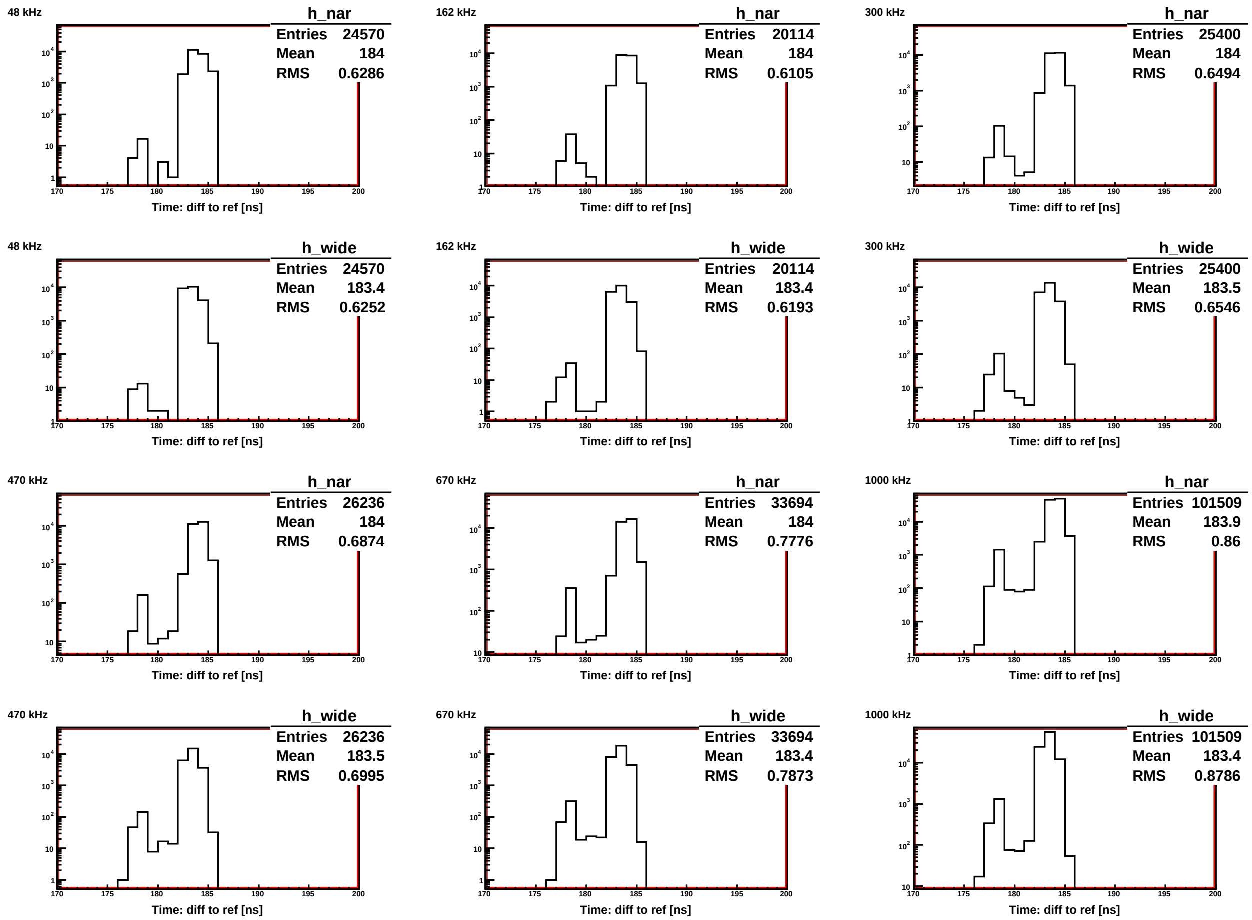


Figure 17: Without RC-circuit. TDC spectra showing pileups at various rates. On any plot, big peak on the right is due to the events as if there were no pileup-events, all the rest region is due to the pileup-events. The span of the pileup-events is about 5 ns and actually it is the amount of delay between the tagger and the PVDIS-trigger, the tagger being early. If we wish this pileup-region to be wider, we would have to make the delay longer.

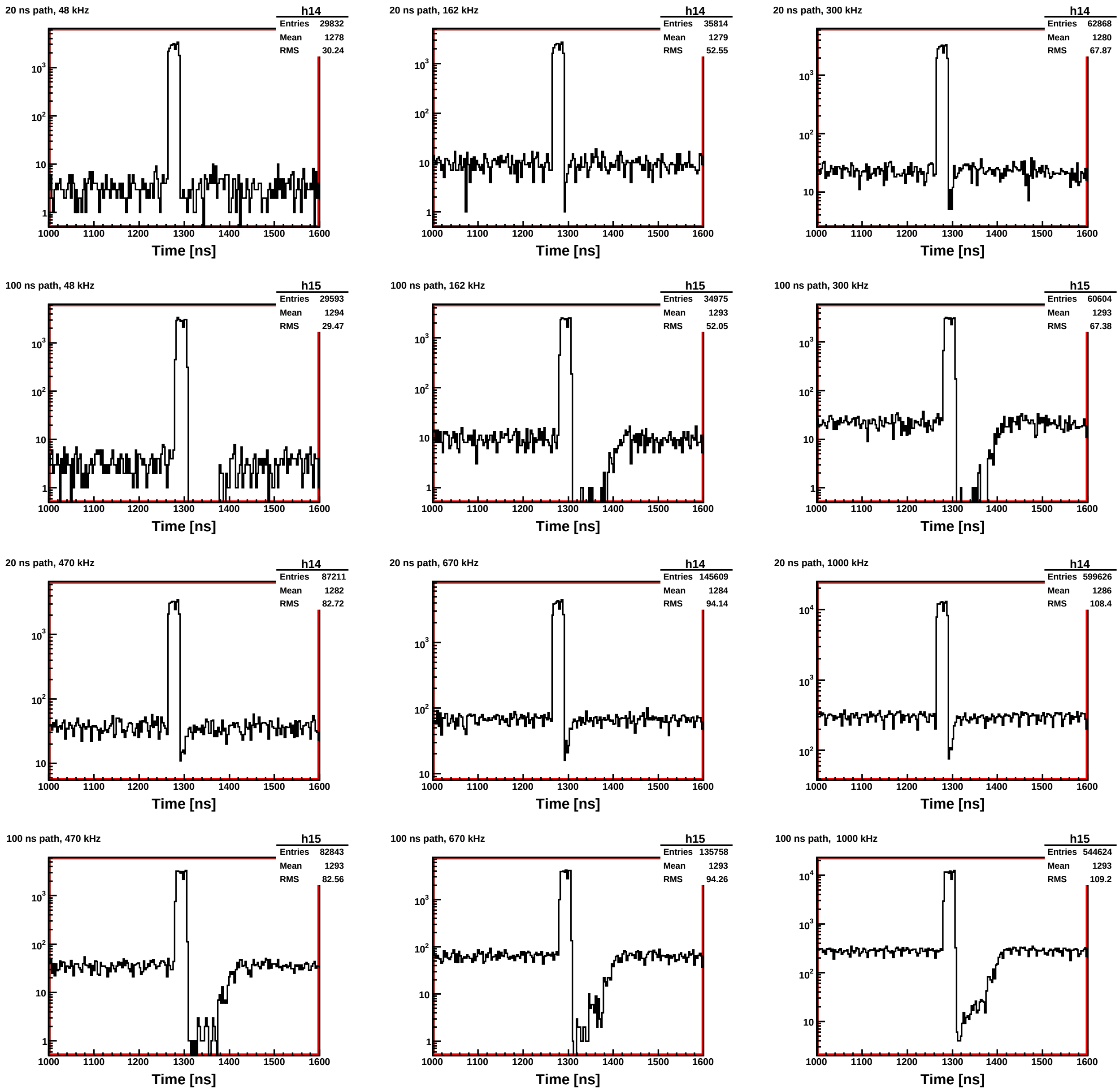


Figure 18: Without RC-circuit. TDC spectra showing dead-zones at various rates for 20 ns and 100 ns paths.