Figure 1: The simulated efficiency of MightyPix1 as a function of hit rate. The hit rate at the Mighty Tracker is expected to reach a maximum of 17 MHz/cm².
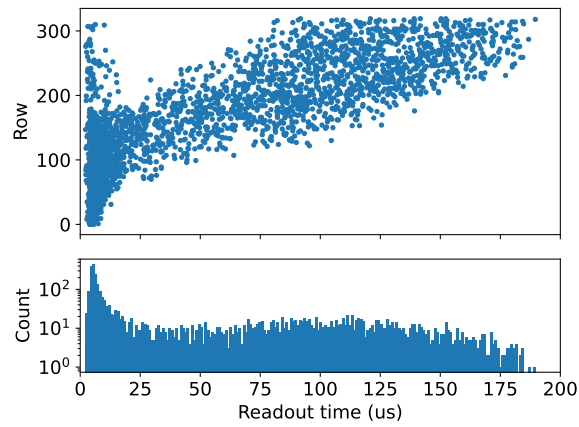

Figure 2: Readout time per row for a hit rate of 50 MHz/cm² with the original readout design. At these high rates the readout time drastically increases with row number.
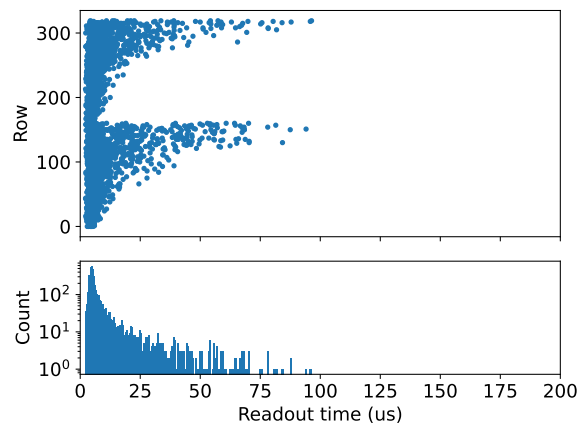

Figure 3: Readout time per row for a hit rate of 50 MHz/cm² with the new readout design. Having two column buffers per column instead of one – one for the upper rows, one for the lower rows – reduces the maximum readout times by a factor of two.