(a) Mode 1: $N = 3 \times 10^{12}, n = 5 \times 10^6$. For hybrid, $s_{\text{det}} = 14959$ and $p_{\text{det}} = 0.52$.

(b) Mode 2: $N = 9 \times 10^{12}, n = 2 \times 10^6$. For hybrid, $s_{\text{det}} = 10396$ and $p_{\text{det}} = 0.41$.

(c) Mode 3: $N = 9 \times 10^{12}, n = 2 \times 10^6$. For hybrid, $s_{\text{det}} = 7055$ and $p_{\text{det}} = 0.25$.

Figure 0.1: Comparing combing rows (C) with not combining (N) for both random (R) and hybrid (H) sampling schemes for least squares sketching. We report both the combined reweight and solution time (blue) and number of nonzeroes in the sampled right-hand side (red), which closely correlate. The matrix is of size $N \times 10$, with n right-hand sides, based on modes 1–3 of the Amazon tensor and factor matrices from a solution of rank $r = 10$. The methods sample $s = 2^{17}$ rows, random uses $\tau = 1$, and hybrid uses $\tau = 1/s$. The results are averaged across 10 runs. Note that each mode is on a different scale.