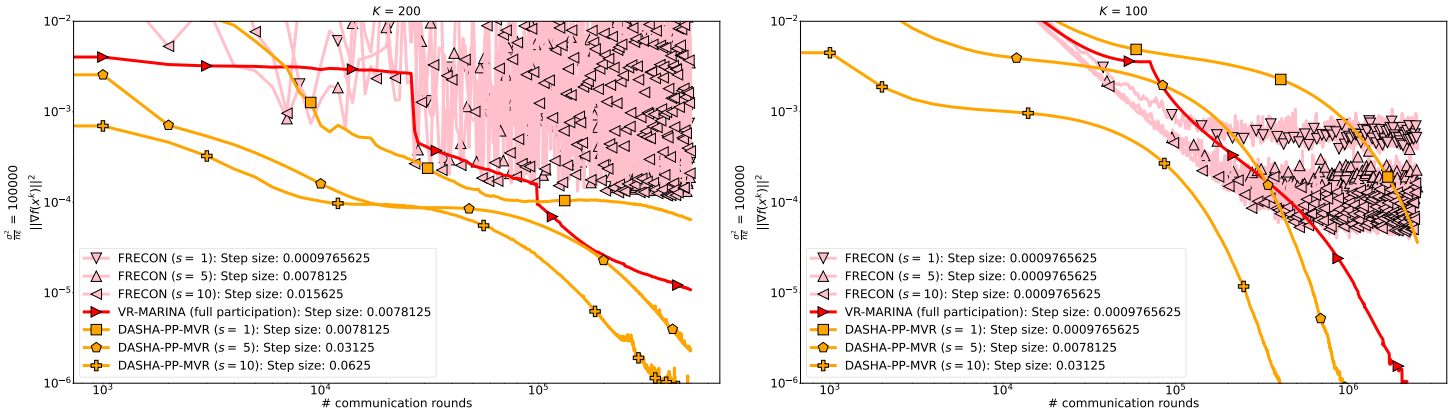
Extra Experiments

In this experiments, we compare our new algorithm DASHA-PP with previous baselines MARINA and FRECON in the partial participation setting (the comparisons of DASHA-PP with DASHA we present in Section A of the paper). We consider MARINA and FRECON because they are the previous SOTA methods in the *partial participation setting with* **compression**. We investigate the same optimization problem and setup as in Section A of the paper. All methods use the Rand$K$ compressor in these experiments.

Stochastic Setting

In Figure 1, we compare all three methods in the stochastic setting on two different datasets: *real-sim* and *MNIST*. The parameter s means the number of clients participating in each round. We can see that DASHA-PP has better convergence rates than FRECON. DASHA-PP with $s \in \{5, 10\}$ even improves MARINA that works in the full participation regime (one should expect that convergence rate of MARINA with partial participation will be even worse).

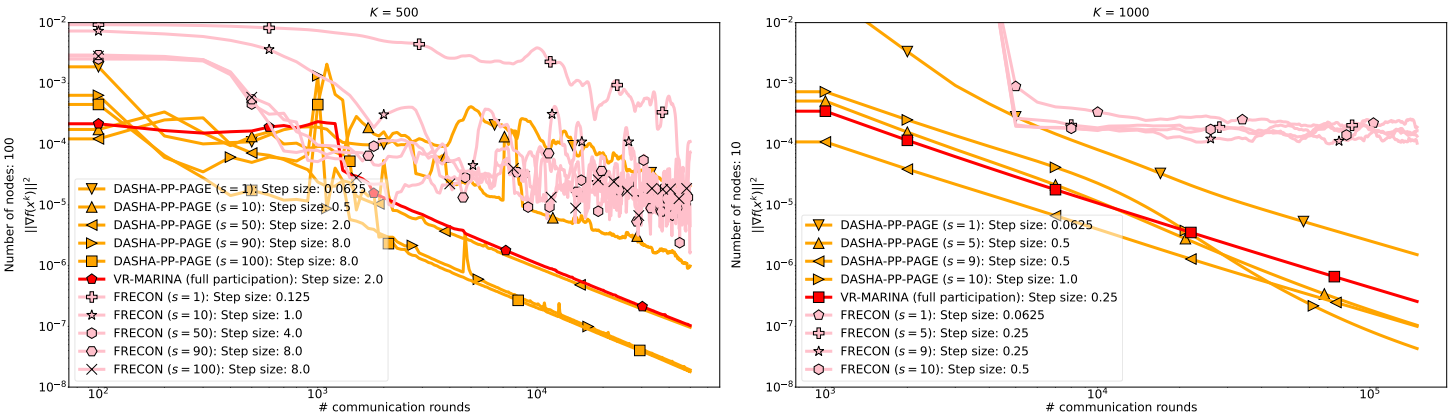


(a) *real-sim* (b) *MNIST*

Figure 1: Classification task

Finite-Sum Setting

In Figure 2, we consider the finite-sum setting. We can see that DASHA-PP with the number of participated clients $s \in \{50, 90, 100\}$ (in *real-sim*) and $s \in \{5, 9, 10\}$ (in *MNIST*) converges faster than MARINA (that works in the full participation regime!). Since FRECON does not support variance reduction of stochastic gradients, it converges to less accurate solutions..



(a) *real-sim* (b) *MNIST*

Figure 2: Classification task