

Table S1 RMSE of $\rho_{FastEPRR}$ when the sample size increases

n	RMSE	n	RMSE
50	17.6	500	8.2
100	12.3	600	8.0
200	9.8	700	8.0
300	8.7	800	7.8
400	8.4	1000	7.7

The RMSE of $\hat{\rho}$ was estimated from 2,000 simulated data conditional on real $\rho = 50$ and

$S = 75$.