

Refined Version

In my dissertation, I revise this paper to improve its generality and technical rigor.

Recent Papers on Correlated Randomization

Around the time this paper was completed, several other works on correlated randomization in differential privacy appeared, providing additional insights into how correlations influence privacy and utility. Representative examples include:

[SaTML'25] [Correlated Privacy Mechanisms for Differentially Private Distributed Mean](#)

Estimation: This work is the most closely related to ours (JRR). It studies pairwise-correlated Gaussian noise shared between two users and analyzes its impact on the privacy–utility tradeoff.

[PETS'26] [Dropout-Robust Mechanisms for Differentially Private and Fully Decentralized Mean](#)

Estimation: This paper considers a multi-party computation (MPC) setting, where “correlated noise” refers to noise vectors designed to sum to zero across all communication rounds. Each party’s noise is required to ensure privacy against colluding parties, while the noises cancel out during final aggregation.

Both papers also survey additional prior work on other forms of correlated randomization.