

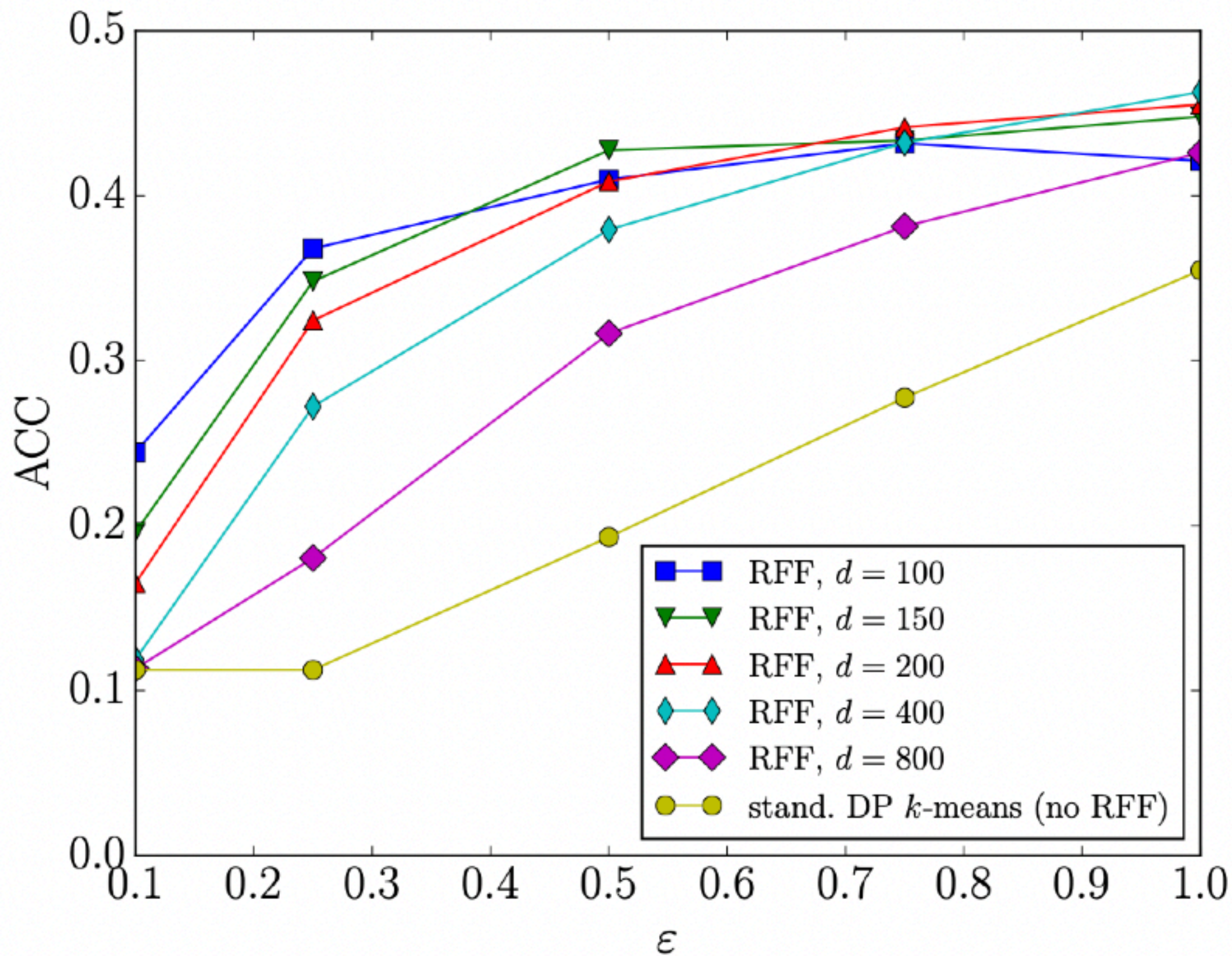
Clustering Accuracy

43

Unsupervised Clustering Accuracy (ACC):

$$\max_u \frac{|\{x : x \in D, \text{label}(x)=u(K(x))\}|}{|D|}$$

- $K(x)$ clustering assignment
- $u(y)$ mapping assignment/label
- $\text{label}(x)$ ground truth label of x

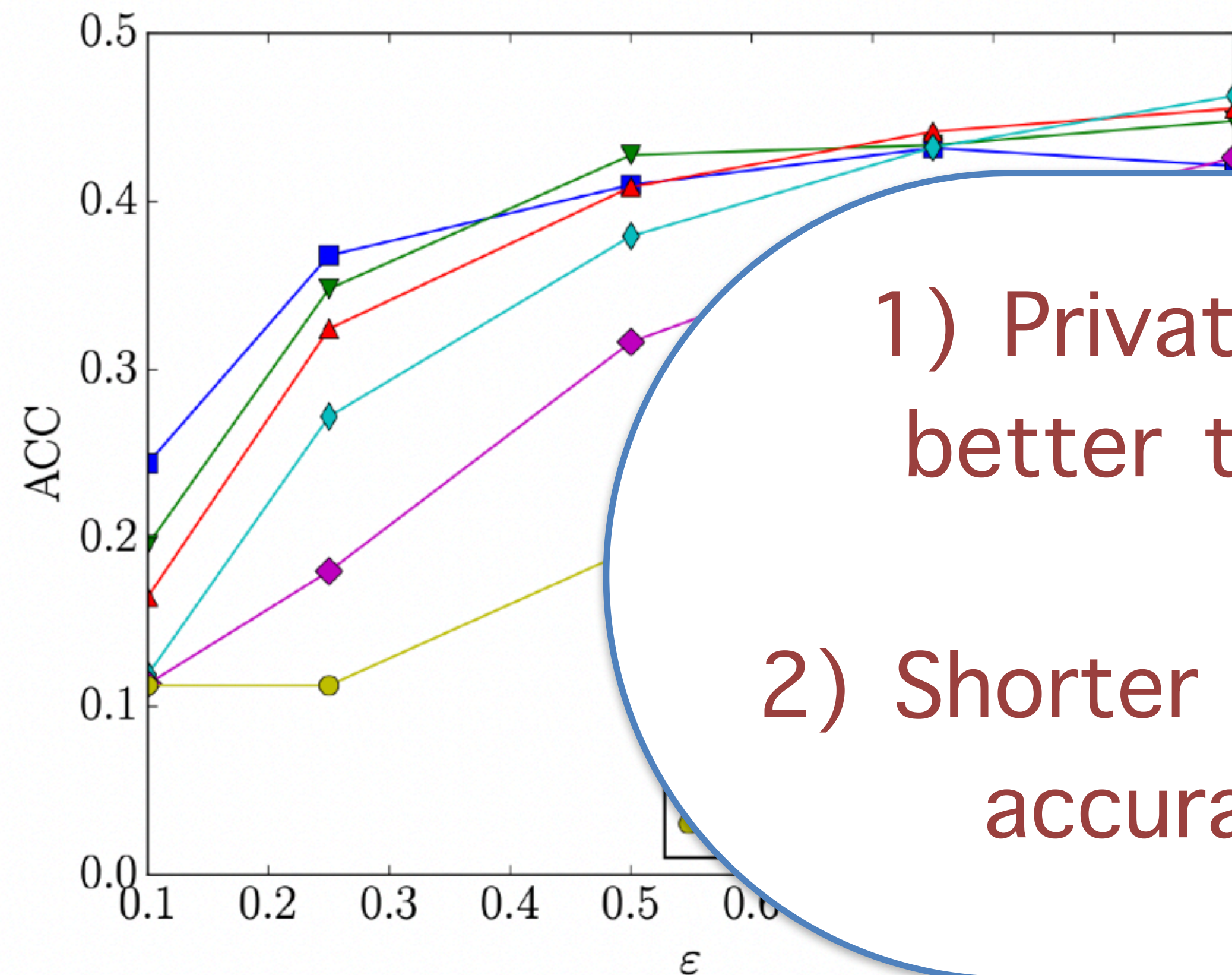


Clustering accuracy as a function of MNIST

1) Private kernel k-means
better than DP k-means

2) Shorter RFF features better
accuracy for small ϵ

Clustering Accuracy



Unsupervised Clustering Accuracy (ACC):

$$\frac{| \{x \in \mathcal{X} : u(K(x)) = y \} |}{|\mathcal{X}|}$$

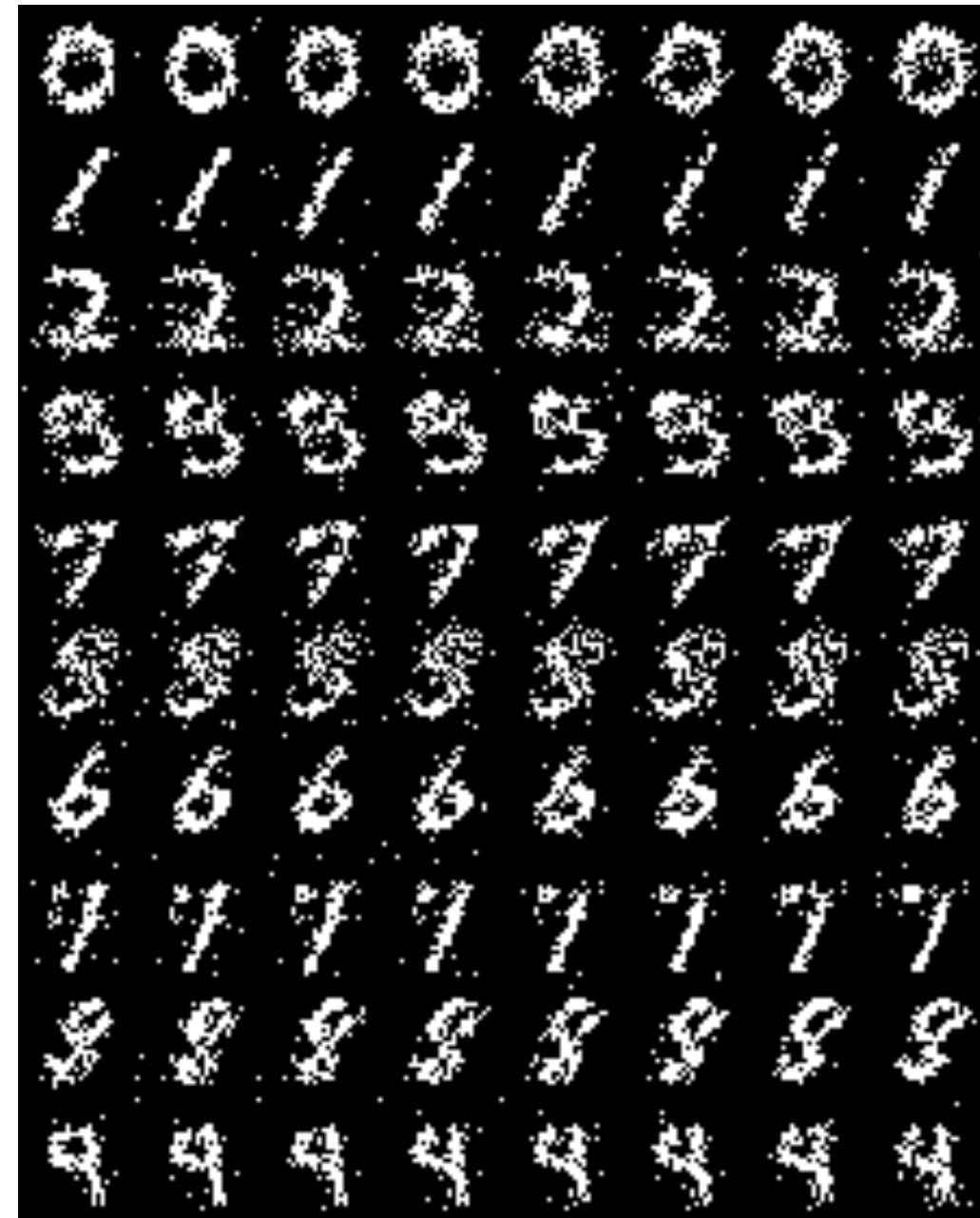
- 1) Private kernel k-means better than DP k-means
- 2) Shorter RFF features better accuracy for small ϵ

Clustering accuracy as a function of ϵ on MNIST

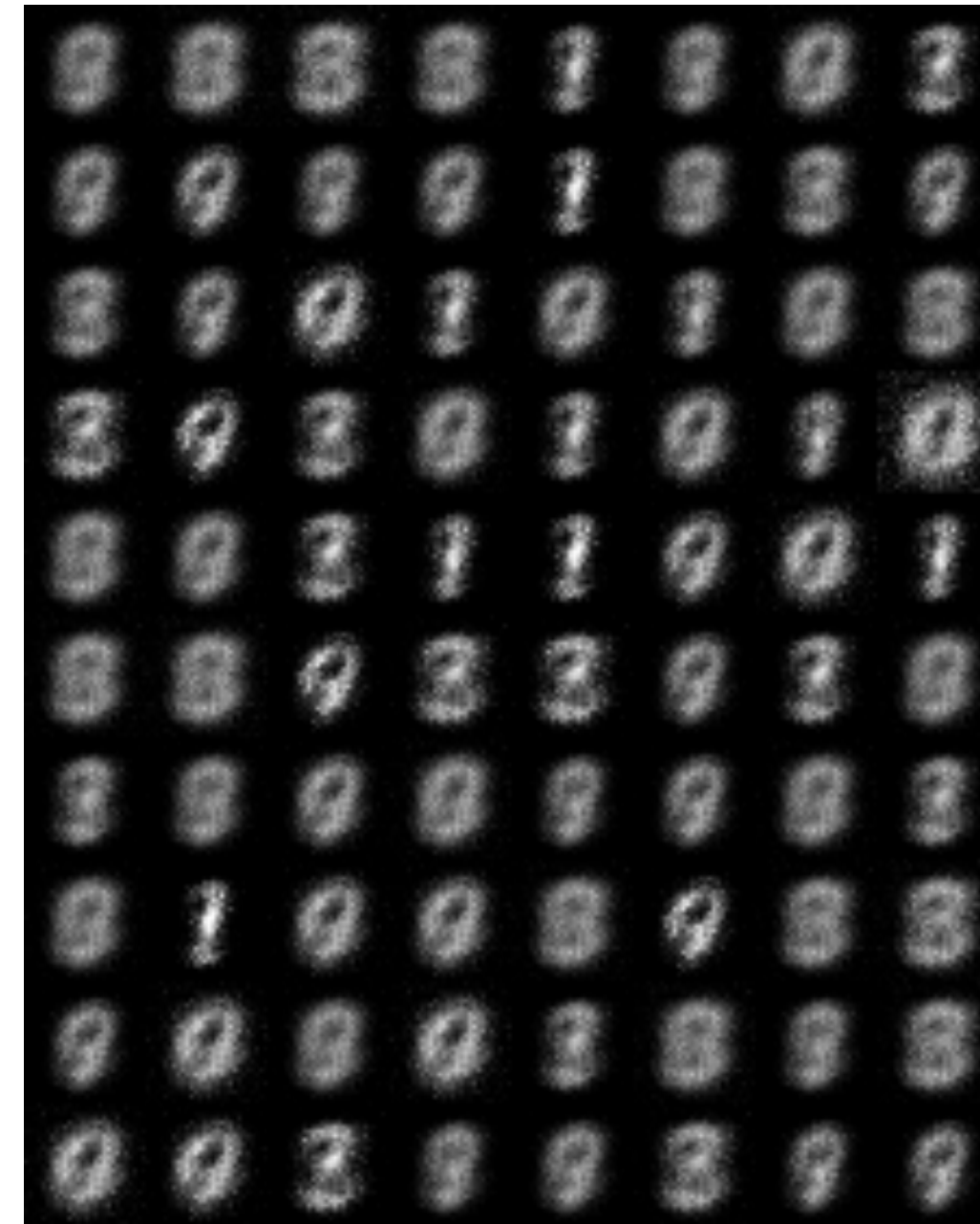
Synthetic Samples (MNIST)



Original samples



RBM samples



VAE w/o clustering



VAE with clustering

Epsilon 1.74, 20 SGD epochs