Rebuttal

Group 4 (Xinwei Shen and Yunfei Yang)

「To reviewer 1:」

Thanks. Especially thank you for the question on experiment 3. Here the underlying data structure that we considered is the so-called perturbed sparse linear model (see

<https://arxiv.org/pdf/1811.05352.pdf> if you are interested), where both the predictors and the response are dependent on some common confounding variables. These latent confounding factors tend to have a bad influence in prediction (one example is the multi-collinearity), so we hope to get rid of them. We would like to use the first PCs to represent them and get rid of them by regressing them out from both predictors and the response. “Regressing out” means we do linear regression w.r.t. PCs and keep the residuals. This is a kind of inverse process of PC regression, where we only keep the PCs as new predictors.

Sorry that due to the limited space on the poster, we may hardly express them clear enough. I agree that this part is interesting and worth more emphasis. I have made a little modification in this part (by removing the contribution part for more space :)

「To reviewer 6:」

Thanks for your advice. Because the measurement for experiment 3 are basically the same with that in experiment 2 and these two experiments are comparable, we visualize the results of experiment 3 in the figure presented in experiment 2. Please see the last two methods in that figure.

「To reviewer 12:」

Thanks for your question. In experiment 1, pca 90%, which has 55 PCs, has an accuracy about 0.94. In experiment 2, the accuracy of PC-regression (with first 50 PCs) is also about 0.94. So the results are consistent. Note that pca 50% only has 7 PCs.

「A simple revision:」

In experiment 3, we now describe the procedure of PC.Adjust a bit clearer.

Due to the limited space, we remove the contribution part and attach it here for your reference.

Xinwei Shen: Experiments 2 and 3; poster writing. \\ Yunfei Yang: Experiment 1; poster writing.