README

This folder includes all code and data to produce the numerical results in the paper and the supplementary material.

Simulation: This subfolder includes all code and data to produce the results in Tables 2-4 in the paper and Tables 1-12 in the supplementary material.

Real Data: This subfolder includes all code and data to produce the results in Table 5 in the paper.

Simulation:

1. Open FDP\_Simulation.R and specify a model from M1--M7 at the beginning.
2. Run FDP\_Simulation.R.
3. Repeat 1-2 over all models M1-M7.
4. Then, 7 Excel sheets including the intermediate results will be saved as
   1. "results\_independence.csv”
   2. "results\_equal.csv”
   3. “results\_fan.csv”
   4. “results\_Cauchy.csv”
   5. “results\_3f.csv”
   6. “results\_2f.csv”
   7. “results\_nonlinear.csv”
5. Open Summarize\_Results.R and specify a model from M1-M7 at the beginning.
6. Run Summarize\_Results.R to get the simulation results.
7. Repeat 5-6 over all models M1-M7.

Table 2 corresponds to method in “true”, “empirical” of the output.

Table 3-4 corresponds to method in “true”, “bootstrap”, “smoother”, “Langaas”, “SLIM” of the output.

Real Data:

1. Open FDP\_GWAS\_Analysis.R.
2. Specify group, method, and t based on the settings in Table 5.
3. Run FDP\_GWAS\_Analysis.R to output the simulation results.
4. Repeat 1-3 over all combinations of group, method, and t.