

Replication files for ‘Optimal inference in a class of regression models’

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Instructions for replicating results in the paper

1. Install the packages `NPRHonest` and `RDHonest`. The package `RDHonest` can also be downloaded from <https://github.com/kolesarm/RDHonest>. All functions in the packages are documented, and the packages also contain several vignettes that explain how to use them. The package `RDHonest` also contains the lee dataset used in the paper.
2. To replicate the simulation results in Tables S1 and S2 in the supplement, run the script `optimal_cis_sim.R`. The script also requires the `knitr` package to be installed (it can be downloaded from CRAN). The script takes about 12 hours to run: the results are pre-computed in the `SimResults-11000.RData` file in the `results/` directory. To compute them from scratch, remove the file from the `results/` directory; the script will re-create it.
3. The script `optimal_cis_lee.R` replicates all empirical results.

- To replicate results in Section 4.2, run the script with the parametrization

```
se.method <- "supplied.var"  
fig.prefix <- NULL
```

The results are printed in the file `lee-results-...-supplied.var-[TIMESTAMP]` in the `results/` directory. The script takes about 8 hours to run, the raw computation results stored in the `lee-0.0002-0.1-1007-IKEHW-supplied.var.RData` file in the `results/` directory. Remove the file from the directory to compute the results from scratch.

- To replicate the results in Section 4.1, and Appendices C.1 and E.3 in the supplement, run the script with the parametrization

```
se.method <- "supplied.var"  
fig.prefix <- NULL
```

The results are printed in the file `lee-results-2e-04-0.1-1007-IKEHW-nn-[TIMESTAMP]` in the `results/` directory, and Figures 3 and 4 are stored in the directory as LaTeX/TikZ figures

```
lee-0.0002-0.1-1007-IKEHW-nn-11.tex  
lee-0.0002-0.1-1007-IKEHW-nn-11-estimation.tex  
lee-0.0002-0.1-1007-IKEHW-nn-opt.tex  
lee-0.0002-0.1-1007-IKEHW-nn-opt-estimation.tex
```

The remaining `.tex` files contain the figures reformatted to fit onto Beamer slides. The script takes about 8 hours to run, the raw computation results stored in the `lee-...-IKEHW-supplied.var.RData` file in the `results/` directory. Remove the file from the directory to compute the results from scratch.