



Algorithms for robust regression and variable selection in high-dimensional settings

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For regression analysis in high-dimensional settings, variable selection is a crucial task to (i) improve prediction performance by variance reduction, (ii) increase interpretability of the resulting models due to the smaller number of variables, and (iii) avoid computational issues with standard methods due to the rank deficiency of the design matrix. When outliers are present in the data, robust methods are necessary to prevent unreliable results. The aim of this talk is to provide an overview and a comparison of the state-of-the-art methodology in robust regression and variable selection for high-dimensional data. The focus is thereby on methods that are implemented in the freely available R package **robustHD**.

Keywords: Model selection; outliers; penalized regression; R.