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Robust Outlier Detection in Genetic Association Studies of Quantitative Traits in the Context of M-regression

Robust multiple linear regression methods are a valuable asset to genetic association studies of quantitative traits, allowing us not to be concerned with the eventuality of outlying observations being present in the data disrupting our analysis results. However, knowledge of these observations may be of the utmost importance to the researcher in order to assess the underlying mechanisms of the data, since they are not always a result of measurement error. To this respect, we propose and discuss a robust outlier test together with an adequate FDR correction measure to be used in the context of a robust multiple-regression model.