High-dimensional Tobit models

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Abstract: To study variable selection for high dimensional Tobit models, we formulate the Tobit models to a single-index model. We hybrid the group exponential lasso for the linear models and univariate regression for the Tobit models to achieve variable selection with group structures taken into consideration. The procedure is computationally efficient and easily implemented. Finite sample experiments show its promising performance. We also illustrate its utility by analyzing a dataset from an HIV/AIDS study.