Model selection by LASSO methods in a change-point model

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The paper considers a linear regression model with multiple change-points occurring at unknown times. The LASSO technique is very interesting since it allows the parametric estimation, including the change-points, and automatic variable selection simultaneously. The asymptotic properties of the LASSO-type (which has as particular case the LASSO estimator) and of the adaptive LASSO estimators are studied. For this last estimator the oracle properties are proved. In both cases, a model selection criterion is proposed. Numerical examples are provided showing the performances of the adaptive LASSO estimator compared to the LS estimator.

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