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Title: Inference for Non-stationary Time Series Regression with Inequality Constraints

Abstract:

We consider statistical inference for time series linear regression where the response and predictor processes may experience general forms of abrupt and smooth non-stationary behaviours over time. Meanwhile, the regression parameters are subject to linear inequality constraints. A simple and unified procedure for structural stability check and parameter inference is proposed. The proposed methodology is shown to be consistent whether or not the true regression parameters are on the boundary of the restricted parameter space via utilizing an asymptotically invariant geometric property of polyhedral cones.