

## Testing linearity against threshold effects: uniform inference in quantile regression

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**Abstract** This paper develops a uniform test of linearity against threshold effects in the quantile regression framework. The test is based on the supremum of the Wald process over the space of quantile and threshold parameters. We establish the limiting null distribution of the test statistic for stationary weakly dependent processes, and propose a simulation method to approximate the critical values. The proposed simulation method makes the test easy to implement. Monte Carlo experiments show that the proposed test has good size and reasonable power against non-linear threshold models.

**Keywords** Linearity test · Quantile regression · Threshold model