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**A model-adaptive test for parametric single-index time series models.** (English)

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**Summary:** In this paper, based on certain residual-marked empirical processes, we study the model test to validate the composite structure with a given link function for parametric single-index time series models. To extend an existing directional test that avoids the curse of dimensionality to an omnibus test, a model-adaptive dimension-reduction test procedure is proposed. Moreover, to fully utilize the dimension-reduction structure under the null hypothesis, the test is designed for adapting both the null and alternative hypotheses, which can improve the power for a more general alternative. Simulation results and a real data example show that the proposed method can perform effectively in checking parametric single-index time series models.

**MSC:**

[62M10](#) Time series, auto-correlation, regression, etc. in statistics (GARCH)

[62F03](#) Parametric hypothesis testing

**Keywords:**

[residual-marked empirical process](#); [dimension reduction](#); [globally smoothing](#)

**Full Text:** [DOI](#)