A New Look At Model Diagnostics, With Applications To Time Series Analysis

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Model diagnostics is often carried out by checking whether or not the residuals from a fitted model satisfy certain postulated model assumptions. Armed with modern empirical process theory, we derive a general formula relating the large-sample distribution of a test statistic computed with the residuals to that based on the true but unobservable errors. An advantage of our approach is that it can effectively handle situations of non-standard asymptotics, e.g. Threshold models. The new approach will be illustrated with some goodness-of-fit tests in time series analysis.

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