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Efficient Accounting for Estimation Uncertainty in Coherent Forecasting of Count Processes

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Coherent forecasting techniques for count processes generate forecasts that consist of count values themselves. In practice, forecasting always relies on a fitted model and so the obtained forecast values are affected by estimation uncertainty. Thus, they may differ from the true forecast values as they would have been obtained from the true data generating process. We propose a computationally efficient resampling scheme that allows to express the uncertainty in common types of coherent forecasts for count processes. The performance of the resampling scheme, which results in ensembles of forecast values, is investigated in a simulation study. A real-data example is used to demonstrate the application of the proposed approach in practice. It is shown that the obtained ensembles of forecast values can be presented in a visual way that allows for an intuitive interpretation.

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