MS 309
Title: "A Note on Updating Forecasts When New Information Arrives between Two Periods"

The authors discuss the problem of updating forecasts in a time-discrete forecasting model when information arrives between the current period and the next period. To use the information that arrives between two periods, the authors assume that the process between two periods can be approximated by a linear interpolation of the time-discrete forecasting model. Based on this assumption the authors derive the optimal updating rule for the forecast of the next period when new information arrives between the current period and the next period.

Comments:
The main strength with the paper is that the suggested approach can handle updating, in a simple way, when information arrives (anytime) between the current period and the next period and that the approach yields consistency between the process between the periods and the model at discrete time points.

My main concerns with the paper are:

1) *The practical relevance/motivation of the considered problem*. The previous literature in this area have considered how to forecast using data on different frequencies, e.g. combining monthly and quarterly data, while this paper considers updating forecasts in a time-discrete forecasting model when information arrives (anytime) *between* the current period and the next period.

In most practical forecasting problem I can not really see that data on the considered variables used in the forecasting model suddenly would appear at a higher frequency, assuming that the forecasting model is using data at the highest available frequency. It is more likely that other non-sample information (other information than the actual variables used in the forecasting model) appear that possible can give information about the considered variables between the periods. This is, however, not discussed or dealt with in the paper. In the application section the authors illustrate (example 2) a case with quarterly observed private consumption expenditures and monthly observed consumer sentiment index, which is the common problem treated in the previous literature, and a reasonably practical forecasting situation. Thus, the authors need to do a better job in motivating/discussing that the considered problem is of practical relevance and be more specific how the considered situation differs from the one considered in the earlier literature. In my mind the current setup differs from the conventional case in that this approach considers the other frequency to be any time in between, within the considered period, rather than a specific time t. However, since we always work with discrete time data the end result, i.e. the update of the forecast, could always be seen to be done with information from a higher frequency t – similar to the earlier literature. So it would be valuable to see how the practical updating rule differs from the earlier in this literature – is the difference large concerning the final forecasts? That is, do the end results differ a lot from what we get with other updating methods?

2) Also, in regard to example 2 it would be nice if the authors compared their method to one of the methods in the previous literature concerning how to forecast using data on different frequencies (since this concerns the situation concerned in the earlier literature) to illustrate the possible strength with their suggested approach or give an example that differs from the conventional problem, i.e. provide an example where the frequencies are different than those considered in the previous literature.

3) The contribution of the paper could further be strengthened if the authors gave an example of how previous methods in the area can give inconsistency between the process between the periods and the model at discrete time points.

4) The paper would also be further strengthened if the authors provided a forecast evaluation of the forecasting performance compared to earlier methods. This need not be lengthy.

5) Question: The approach builds on approximating an underlying continuous process assumed sampled at discrete time points. Are there any modelling situations where it would be hard to find a suitable continuous process that fits the forecasting situation?