

Interactive comment on “The effect of flow and orography on the spatial distribution of the very short-term predictability of rainfall” by L. Foresti and A. Seed

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We thank Geoff Pegram for reviewing the manuscript and for the positive feedback.

Indeed, an exponential auto-correlation function (ACF) has an analytical integral which does not require the numerical integration using the Simpson’s rule. It must be mentioned that we performed additional analyses with auto-regressive processes of order 2 (not presented in the paper) and also had in mind to use the Simpson’s rule to integrate ACFs that are not necessarily exponential, for example derived by direct comparison of forecasts and observations at all lead times (without extrapolating the whole ACF

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using only the lag1 auto-correlation as it was done in our study). We will include in the revised version of the paper that this particular ACF can be analytically integrated.

The idea of using a moving window approach for the online update of the mean and the variance is very interesting and will be included as a comment in the conclusion of the paper. It may not be so necessary for the temporal update of statistics pixel-by-pixel, for which it takes a long time before having enough samples. However, it is much more pertinent if the auto-regressive parameters are derived by integrating over the number of pixels within an image and need to be updated in real-time to adapt to the temporal transitions between stratiform and convective rain.

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