

Interactive comment on “Comparison of raingauge observations with modeled precipitation over Cyprus using Contiguous Rain Area analysis” by N. Tartaglione et al.

N. Tartaglione et al.

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General comments

As stated in the text, it was impossible to perform verification by means of standard nonparametric statistical methods, due to the relatively small size of the statistical sample. So we decided to use the Contiguous Rain Area (CRA) analysis, which is suitable for case-study approach, for its ability to quantify the spatial forecast error. However, at the same time, our idea was also to test the CRA method to assess its sensitivity to some parameters such as the verification domain width and the matching criterion, in view of a possible operational implementation. For this latter issue, a case-study

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approach was preferable. We agree with referee that this result is not general, thus we can add a sentence to stress this issue (perhaps we did not it enough). However, E. Ebert communicated us that a similar result (correlation better than MSE as pattern-matching criterion) was found in another context (see, in the published text, the reference to Grams et al. 2005). Current results suggest that attention must be paid in an automatic use of the CRA technique since a non-corrected setting of the method may influence results. Thus, the issue/result of the paper is not only the verification result obtained for the single case study but also a sort of recommendation for people that want to apply this technique in an unsupervised and automatic way. E. Ebert also stated this latter point in her review of the paper.

Specific comments

1.) The high pressure near the Caspian Sea is visible as an 'H' in fig. 1 and as a ridge (thick line labeled 560 gdm) in fig. 2. We shall add (figs. 1 and 2) instead of only fig. 2. Moreover to improve the readability of these figures we shall add some geographic names.

2.) The division of the island is an issue too delicate and we do not think that it is the case to address it in the paper. We have written that the Cyprus Meteorological Service manages observations. When people referred to Cyprus usually intend the southern part.

3.) We agree with the referee, it was a misprint so we have to substitute column 2 with column 3.

4.) To improve the readability of the paper, the following paragraph:

However, to eliminate those matches that are not statistically significant at the 95% confidence level, a minimum correlation value between forecast and observation fields had to be achieved. The statistical significance of each shift was assessed using the F test (Panofsky and Brier, 1958; Xie and Arkin, 1995)

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has to be changed as follows:

Since observations were not available on each grid point, the number N of grid points where the analysis was performed changed from shift to shift. For this reason, a minimum correlation value (not to be confused with the pattern-matching criterion) had to be achieved in order to consider each shift as reasonable or not. This correlation value depends on the effective number of independent comparing samples, which are function of N and the autocorrelation of both the observed and forecast fields. After choosing a 95% confidence level, the F test (Panofsky and Brier, 1958; Xie and Arkin, 1995) was chosen to assess the statistical significance of each shift.

5.)

i) We shall change in the title raingauge with rain gauge. ii) Obviously we shall delete one. iii) We agree with the referee, so we'll change island with the island

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