

## ***Interactive comment on “Verification tools for probabilistic forecasts of continuous hydrological variables” by F. Laio and S. Tamea***

**F. Laio and S. Tamea**

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We appreciate the constructive suggestions of the reviewers and thank them for their positive comments. In the following, we respond to each reviewer’s note individually and address the Editor and the Readers attention to the changes made in the manuscript (reviewer comments in italic, author responses in bold)

- Response to A. Taramasso

*To evaluate the probability forecasts of hydrological variables taking into account an usual economist approach is original and permit an analysis of quality of hydrological forecasts. The scheme of the paper is clear and the review of bibliography is sufficient.*

**The reviewer’s kind comments are appreciated**

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*I suggest to insert in chapter 4 a more detailed description of an example of the tool proposed and a better description of the figure 3.*

**We have improved the presentation of our case study in Section 4 by adding some more details and a figure (Figure 3 in the new version of the paper) where one can visualize the outcomes of the four prediction methods used in the verification exercise.**

- Response to anonymous referee 1

*In this paper two verification tools for probabilistic forecast are described and tested. The paper is well written, clear and appropriate to the aim of this journal. My opinion is to accept the paper with only minor revision*

**The reviewer's kind comments are appreciated**

*in the introduction probably it should be simplified the description of all cases described in Table 1. I would not describe all details*

**The referee's suggestion to decrease the level of detail in Section 2 is valuable, since it goes in the direction of possibly improving the readability of the paper. However, Section 2 is not merely a review of the available verification methods, that could be easily shortened; in contrast, it is meant to give a background for the proposed verification tool, addressing the different assessment techniques for discrete and continuous variables. Moreover Section 2 serves as the basis for understanding some of the methods proposed in the following of the paper. As a consequence, if we decrease the amount of introductory information, we then need to add more details in the following sections: for example the Ranked Probability Score, described in Section 2, is recalled several times. The same considerations apply to the Mean Squared Error and Mean Absolute Error, now defined in Section 2.2, but then repeatedly mentioned in the following of the paper. In summary, we think that a reduction of Section 2 would imply a prolifer-**

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ation of explanations in the following sections and we therefore decided not to modify Section 2.

*Formula 5 and 6 should be better described (it is worth to briefly explain the Heavyside function)*

**As requested, the Heavyside function has now been briefly defined just before Equation (5)**

*I would add more details in the application section. More information on analysed series would allow to the hydrological reader to better understand the described methods.*

**More details have been added, and a new figure (Figure 3 in the new version of the paper) has been added to visualize the outcomes of the four prediction methods used in the verification exercise.**

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 2145, 2006.

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