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Interactive comment on "A refined statistical cloud closure using double-Gaussian probability density functions" *by* A. K. Naumann et al.

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Mathematical correctness is not a question of culture!

Both reviewers of the paper by Naumann et al. expressed their concern that the authors developed and tested their new parameterisation using the same set of data. While I have the impression that the authors took this critique into account in their revised version, I am puzzled about the first paragraph of their reply. There the authors make a strange statement that it would be a question of culture in the various branches of geophysics whether they would use different data for training and testing or not. In particular in the branch of parameterisation development for atmospheric models such an effort would not be usual.

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I wish to intensely express my objection against such a view. This statement is inadmissable and wrong. Mathematical and statistical correctness is by no way a question of "culture". A wrong method remains a wrong method whatever branch of physics or geophysics we deal with.

In order to underpin the arguments given by the reviewers, I cite a passage from the well–known textbook on statistics in climate research by von Storch and Zwiers (section 18.4.7 on artificial skill, italic print by the authors):

> Skill scores should be constructed so that they give an unbiased view of the true utility of the forecast scheme. This requirement is violated when statistical forecast schemes are built if the same data are used to develop the scheme and evaluate its skill. [...] The estimate of skill obtained from the training sample is called the *hindacst skill*. The hindcast skill is always somewhat greater than the forecast skill, and this optimistic bias in estimated skill is called artificial skill.

From the first page of the author's reply it appears that they do not actually understand the problem and they only "very much agree that ... a separation of training and test data *might be helpful*" (italic print by the Editor). Obviously, they do not see the necessity for this.

I return the revised manuscript therefore to the reviewers in order to get their opinion whether the critique was taken seriously enough or not.

Reference

von Storch, H., and F.W. Zwiers, 2001: Statistical analysis in climate research. Cambridge University Press, Cambridge, UK. ISBN 0-521-01230-9.

Interactive comment on Geosci. Model Dev. Discuss., 6, 1085, 2013.

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