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Geoscientific Model Development Discussions

Interactive comment on "The probabilistic hydrological model MARCS (MARkov Chain System): the theoretical basis for the core version 0.2" *by* Elena Shevnina and Andrey Silaev

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Dear Editor,

We noticed that it was not easy to find Referees for this model description paper. The discussion of the manuscript is started 18 April 2018 and since then many Referee's nominations were rejected. However, the comments of two Anonymous Referees and A. Frolov allow improving the text of the manuscript. The following changes were done in the revised version of the manuscript: 1. We moved the theoretical basis of the AFA to the Annex 1. It allows to introduce the Section 1.1 for general audience in simple way (see the Constructive suggestions by Anonymous Referee #1), and at the same time

to keep the math "language" to present the AFA method, which is now a new (see the comment 1 Anonymous Referee #2). Now, the Annex 1 provides the AFA's theoretical basis for readers wanted for details. 2. We added the Fig. 1 to the section 1.1 to better explain place the model core version 0.2 to the general structure of the probabilistic hydrological model MARCS. The limitations of this version of the model core were explained for general readers (the Discussions section) as well as for practitioners (the Annex 1) according to the comments of two Anonymous Referees and A. Frolov. 3. We extend the section of Discussions to better place the model MARCS among others hydrological models. We have been trying to incorporate as much comments as possible in the revised text of the manuscript. However, some of them were not finally incorporated to keep the structure of the manuscript balanced. In particular, we do not rise the discussion the comment 1 by A.Frolov or suggestions by the Anonymous Referee #2 since it needs to additional references to show regional studies or specific technical papers in Russian. However, four important references in Russian were added to the list of references to discuss the comment 3 of the Anonymous Referee #2.

Our time to improve the manuscript was limited by 10 days since the submission of the comments by the Anonymous Referee #2. Not too much to do essential improvement. We would kindly as to extend of the deadline of the final submission by 13 of March, 2019.

with the best regards Elena Shevnina and Andrey Silaev

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