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Comment

## ***Interactive comment on “Brief Communication: 2-D numerical modeling of the transformation mechanism of a braided channel” by Y. Xiao et al.***

### **Anonymous Referee #1**

Received and published: 28 November 2014

Concerning "2D numerical modeling of the transformation mechanism of a braided channel" by Xiao, Yang, Shao, Chen and Mu for the journal Nonlinear Processes in Geophysics the following.

(i) The main conclusion is that the manuscript is not ready for publication due to methodological flaws in the presentation. Even after considering earlier papers like Wong et al 2010 and Xiao et al 2012, it is difficult or impossible to piece together a notion of what the 2D model used in the manuscript entails. As a consequence it is very difficult to judge the value of the model simulations presented. For a brief communication like this, supplementary material is required describing the model in a unified way, including a clear description of the many parameterisations involved in this model.

(ii) The parameterisations of the model are not clear and as a consequence it is sci-

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entifically unclear what the crucial aspects are in the model that lead to the different model results presented.

(iii) Throughout the manuscript, statements and language need to be clarified, as this lack of clarity now obstructs understanding of the research. This will perhaps become clear from the culmination of minor remarks compiled below.

As a consequence of this lack of understanding, making an overall judgement of the reseach in the manuscript is difficult. Maybe it is excellent, maybe not? What can be said is that the way the research is presented is at the moment not suitable for a journal like Nonlinear Processes in Geophysics, with its broader readership in geophysics.

#### Minor Remarks

Page 954 line 15: please change to: as there is ... [otherwise comma splice error]

Line 17: mechanisms

Line 24: Review of previous work [Remove "the" twice] can be found [not can be seen] development [singular]

Page 55 line 6: Please remove "preliminary" as now it reads as if non-preliminary studies might have been offered, which presumably is not what is meant?

Line 10: Please remove phrase "In the numerical experiment" as it is superfluous.

Line 14: Control factors such as ... [change sentence] from a braided channel into a meandering [change articles to "a"]

Line 15: Please remove "work of"

Line 20: A 2D numerical model [rephrase article]

Line 21: The effect of ... [add article]

Line 24: Please remove article "the" as these processes are not definite.

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Page 956 line 2: really the supplementary material should contain a unified description of Wang et al (2010) and Xiao et al (2012) such that the 2D model and its particular relevance to the current communication becomes clear.

Line 23: Please add a space.

Page 957 line 2: Which 2D model as its description and crucial aspects are too vaguely described?

Around line 18:  $\cos \theta$  was taken to be 1, so the logic here is peculiar. Please clarify.

Equation (3): I don't understand the equal sign or rewriting; where is the x-derivative?

Page 958 line 8: proportional

Formula (5): comma missing

Line 14: I don't understand this sentence and the statement.

Formula (6): I don't understand how this follows from (3).

Line 18: "lame"?

Main comment: this is not an adequate description of the model, or a description of its main features and the relevant new aspects for this paper.

Page 959 line 4: Where does grain size enter the model? Please clarify.

Line 17: The different runs are not clearly described in terms of their differences and similarities. A table summarising these different runs would also help but this should be done at the beginning of this section.

Line 20: Figures show or Figure shows so the wording requires correction.

Line 23: Change to: When time progresses

Page 960 line 9: This sentence is unclear; I cannot or can hardly understand what is stated.

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Line 16: I don't understand this statement; please clarify.

Line 26: What is the definition of "primary channel"? Which "the same channel". Hence, I don't understand the sentence/statement.

Page 961 line 13: I don't see the differences the authors observe regarding the linearity in the figure. Please quantify what is allegedly seen.

Line 20: which agrees ... Please explain the reasoning in this subsentence.

Page 962 line 1: remove "of the research"; why does the research have a tendency? I don't understand the statement.

Fig. 1: What is the meaning of the scale and its numbers? Please clarify: bed elevation. Which reference run is this? What are the differences between this run and runs 1-4?

Fig. 2: Remove comma. Repeat crucial differences in runs in the caption. Give more explanation in the caption.

Fig. 4: This caption is the same as the caption of figure 2, so its content should be the same yet the figures are different? Please clarify.

Fig. 5: Explain in caption and on axes what is displayed, please.

Fig. 6: Explain the axes and the variables displayed, please.

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Interactive comment on Nonlin. Processes Geophys. Discuss., 1, 953, 2014.

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