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February 3, 2023

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Memorandum

To: Dr. Zhongbo YU, Editor of Hydrology and Earth System Sciences

Subject: Revision of Paper # hess-2023-229

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Dear Editor:

Upon your recommendation, we have carefully revised Paper # hess-2023-229 entitled "Technical note: Wellbore water volume computation of tracer test in numerical modelling in a confined aquifer".

**Response to Reviewer 1:**

My comments are as follows:

1. The proposed new mathematical model is valuable and can be considered as a technical note (after a major revision!)

[Reply: Thanks a lot. We have made reversion considering all comments by reviewers.](#)

2. The writing of the paper is very poor, not only in the language but also in the logic and organization. The entire paper must be rewritten.

[Reply: We have rewritten the manuscript. English speaker, Dr. Hafizou Mohammed Sow, helped us for checking the English](#)

3. The motivation must be rewritten. The problem in the previous study should be clearly stated and its potential error should be quantified.

[Reply: The motivation has been rewritten.](#)

4. The paper may be too long for a technical note.

[Reply: We have deleted the discussions.](#)

5. The bottom line is that it is very difficult to review the paper and judge its merit because it is poorly written with a lot of confusing sentences.

[Reply: We have revised it.](#)

31 **Response to Reviewer 2:**

32 The manuscript revised the solute transport model based on the mass balance in a well-aquifer system,  
33 with special attention given to the wellbore water volume. This work is innovative in that it found the  
34 wellbore effect while modeling solute transport, which is overlooked in the commonly used numerical model,  
35 MODFLOW/MT3DMS. The technical advancement fits into the scope of HESS as a technical note. I have a  
36 few specific comments that I will list below to improve the current manuscript.

37 [Reply: Thanks a lot. We have made reversion considering all comments by reviewers.](#)

38

39 A few specific comments

40 1. It is suggested that the title be changed to:

41 Technical Note: A revised numerical model for wellbore water volume computation in a confined aquifer  
42 during chemicals transport in a wellbore-aquifer system

43 [Reply: We have revised it.](#)

44

45 2. As a technical note, the current manuscript is a bit long. Please reduce part of the content properly.

46 [Reply: We have revised it.](#)

47

48 3. Lines 27-33: Please change this sentence appropriately.

49 [Reply: We have revised it.](#)

50

51 4. Line 46: Please replace “the revised...” with “the revision of...”

52 [Reply: We have revised it.](#)

53

54 5. Line 84: Please replace “may be not...” with “may not be...”

55 [Reply: We have revised it.](#)

56

57 6. Line 104: Please replace “case of...” with “the case of...”

58 [Reply: We have revised it.](#)

59

60 7. The present version focuses on comparing the proposed model to MODFLOW/MT3DMS. Similarly,  
61 please add a section for comparison with FELEOW.

62 [Reply: We have revised it.](#)

63

64 8. Line 97: Please revise this sentence.

65 [Reply: We have revised it.](#)

66

67 9. Please check the spelling of the words, for example, in Line 121: filed. It is suggested to find a native  
68 English speaker to improve English presentation

69 [Reply](#): We have rewritten the manuscript. English speaker, Dr. Hafizou Mohammed Sow, helped us for  
70 checking the English

71

72 10. Please make adjustments to sections 3 and 4, the current version is a bit long in the writing.

73 [Reply](#): We have revised it.

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76 If you have any further questions about this revision, please contact me.

77 Sincerely Yours,

78 Quanrong Wang, PhD, PG.

79 Professor and

80 Holder of Endowed CUG Scholar in Hydrogeology

A handwritten signature in black ink that reads "Quanrong Wang". The signature is written in a cursive, flowing style.