The authors would like to thank Prof. Shokri for his constructive comments which will substantially improve the readability of the paper. All comments are addressed. Detailed responses to the comments are as follows.

Please note. All comments are bold-faced. Authors' responses follow immediately below the comments.

General comments:

This paper introduces a new analytical solution for contaminant transport in porous medium by using finite spatial domain method with arbitrary time - dependent inlet boundary condition. For driving a generalized analytical solution, the Laplace transform in combination with generalized integral transform was used. For verification, the analytical model is compared with a numerical model (finite difference) for a periodic input function (f(*t*)=1+sin(*t*)). The model was validated by changing the longitudinal dispersion coefficient (D_L) and first-order decay rate constant (*k*). Finally model evaluated by using numerical integration for periodic and exponential input functions. Considering all aspects, I recommend this paper to be published after these considerations:

Authors' response:

The authors appreciate the comments from Prof. Shokri.

Specific comments:

1. The result of analytical method of this paper was verified with a numerical method. We know, in simplified case which mentioned in this paper, analytical solutions have more accuracy rather than numerical ones. Therefore, it makes sense

to verify a numerical model with analytical solutions. But to verify the analytical solutions, a method with more or at least same accuracy is needed. I suggest using experimental or observational data or other analytical solutions like semi-finite or infinite spatial domain solutions which are mentioned in the page 4100 line 22 and 23 of your paper or the analytical solution published by Marsily (1986).

Authors' response:

The authors present a generalized analytical solution for solute transport in a finite spatial domain with arbitrarily time-dependent inlet boundary condition. The validity of the developed generalized analytical solution is first checked by comparing with two existing analytical solutions under conditions of the constant and exponentially decaying input function, To further test the correctness of the mathematical derivation and manipulation, the developed generalized analytical solution is tested by comparing with the corresponding numerical solution using the Laplace transform finite difference technique under the condition of sinusoidally periodic input concentration. Further more, numerical integration method is introduced to calculate the developed generalized analytical solution and its accuracy is checked by comparing with the close-form analytical solution under sinusoidally periodic input concentration. The developed generalized solution has been cross-checked by comparing among the existing analytical solution, corresponding numerical solution, and solution evaluated using numerical quadrature. Thus the developed generalized analytical solution is comprehensively verified. Comparing with the relevant analytical solutions in semi-finite or infinite spatial domain will be not included in the revised manuscript because the different exit boundary conditions have significant impacts on the behaviors of the analytical solutions

and produce discriminative results.

2. page 4103 line 5 "V stands for the averaged steady-state pore water velocity" may change to: V

stands for the average linear velocity of the pore fluid

where U is specific discharge, or Darcian velocity and n is porosity.

Authors' response:

Thanks for this comments. We have incorporated the suggested definition to the revised manuscript.

3. page 4103 line 15 please change "(1) – (4)" into "(1) to (4)" and same correction for same cases throughout the paper.

Authors' response:

"(1) – (4)" is changed to "(1) to (4)" throughout the paper.

4. page 4106 line 6 "ψ" has never introduced before.

Authors' response:

"ψ" is a typo and is amended to "ψ_m"

5. page 4106 line 9 "C_G" has never introduced before.

Authors' response:

"C_G" is a typo and is corrected as "$\overline{C}_V$"

6. page 4107 line 7, increase the size of the fonts in the equation.

Authors' response:

The size of the fonts in the equation is amplified.

7. page 4108 line 1 "The solutions for constant and exponential decaying time-dependent input functions in Table 1 are the same as those reported in literature" should be mentioned in the title of table 1 as well.

Authors' response:

"The solutions for constant and exponential decaying time-dependent input functions in Table1 are the same as those reported in literature" is added to the table caption.

8. Page 4108 line 26 *D* has never introduced before. Is it equal to D_L?

Authors' response:

" D **" is a typo and is changed to "** D_L **".**

9. Page 4108 line 28 please change "D and k" to the longitudinal dispersion coefficient (D_L) and first-order decay rate constant (k)

Authors' response:

"D and k" is changed to "the longitudinal dispersion coefficient (D_L) and first-order decay rate constant (k)".

10. page 4109 line 27 to page 4110 line 2, may move to the Conclusion.

Authors' response:

This paragraph is moved to “5. Conclusion”**.**

Reference

De Marsily, Ghislain (1986). Quantitative hydrogeology: groundwater hydrology for engineers. Orlando, FL, USA, Academic Press.