

Review Form 3

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms_JAMCS_129922
Title of the Manuscript:	Symmetry analysis, one-dimensional optimal system, and group invariant solutions for the shallow water waves of finite amplitude in (1 + 1)-dimensions
Type of the Article	Original Research Article

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Review Form 3

PART 1: Comments

	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	In the manuscript, Lie symmetry group method is applied to analyse the considered equation system. While, the results are remarkable. The system is reduced into some ODEs, which are important in both mathematics and physics.	
Is the title of the article suitable? (If not please suggest an alternative title)	Yes	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	Yes	
Is the manuscript scientifically, correct? Please write here.	Some part of the work is unclear. Once the author(s) address my comments, I will be able to provide a definitive response.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	I suggest to add some recent references to the references, in order to enhance the comprehensiveness of the references and ensure they are up-to-date.	

Review Form 3

<p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The language quality is quite poor and should be improved. I suggest some improvements in the comments</p>	
<p>Optional/General comments</p>	<p>#1: In the considered system, is the variable (h) depended on (x,t) or is only a function of x (h(x))? you view h as an independent variable that depends on (x,t). in contrast, in the following works (h) is a function of (x). What is the rationale behind this perspective?</p> <p>(1) AV Aksenov, KP Druzhkov. "Conservation laws and symmetries of the shallow water system above rough bottom." <i>Journal of Physics: Conference Series</i>. Vol. 722. No. 1. IOP Publishing, 2016.</p> <p>(2) P Voraka, C Kaewmanee, SV Meleshko. "Symmetries of the shallow water equations in the Boussinesq approximation." <i>Communications in Nonlinear Science and Numerical Simulation</i> 67 (2019): 1-12.</p> <p>#2: In the following paper, it appears that the Lie symmetries of the considered system for a special case (h=0) were found; please cite this work and discuss it.</p> <p>P Voraka, C Kaewmanee, SV Meleshko. "Symmetries of the shallow water equations in the Boussinesq approximation." <i>Communications in Nonlinear Science and Numerical Simulation</i> 67 (2019): 1-12.</p> <p>#3: It would be beneficial to keep the keywords more general. I kindly request that you replace "optimal one-dimensional subalgebras of A2,-25,33" with "optimal one-dimensional subalgebras", and replace "invariants of IntG on A2,-2 5,33 ." with "differential invariants".</p> <p>#4: Page2, Paragraph 4, you state that "a one-dimensional subalgebra of G may be used to reduce the number of independent variables by one.". Is a one-dimensional subalgebra only used to reduce the number of independent variables? Additionally, you should discuss the concept of symmetry reduction in more detail.</p> <p>#5: Page 2, Paragraph 6: The paragraph concerns about your paper and its organization. I kindly request that you relocate the sentence: "The optimal system of subalgebras has been used recently to obtain exact solutions of PDEs appearing as a mathematical model for various physical system." to the previews paragraph and include the following reference at the end of that sentence.</p> <p>M. Bazghandi, "Lie symmetries and similarity solutions of phi-four equation." <i>Indian J. Math</i> 61.2 (2019): 187-197.</p> <p>#6: Page 3, Section 2, paragraph 1: It appears that there are some missing articles in this section. "Propagation of tsunami waves and runup of" should be "The propagation of tsunami waves and the runup of".</p> <p>#7: Finally, please ensure that the order of references in the References section aligns with the journal's template.</p>	

PART 2:

	<p>Reviewer's comment</p>	<p>Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</p>
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

Review Form 3

Reviewer Details:

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