



SDI Review Form 1.6

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2015_BJAST_17358
Title of the Manuscript:	STRUCTURAL BEHAVIOR OF WEIRS WITH BOTTOM CIRCULAR OPENINGS
Type of the Article	Original Research Article

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	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)
<u>Compulsory</u> REVISION comments	1. The manuscript is concerned with structural behavior of weirs with bottom circular openings, which is interesting. It is relevant and within the scope of the journal. 2. However the manuscript, in its present form, contains several weaknesses. Adequate revisions to the following points should be undertaken in order to justify recommendation for publication. 3. For readers to quickly catch the contribution in this work, it would be better to highlight major difficulties and challenges, and your original achievements to overcome them, in a clearer way in abstract and introduction. 4. It is mentioned in p.1 that ANSYS Fluent and ANSYS Mechanical applying Fluid Structure Interaction techniques are adopted numerical analysis of weirs with different dimensions. What are the other feasible alternatives? What are the advantages of adopting these particular techniques over others in this case? How will this affect the results? More details should be furnished. 5. It is mentioned in p.1 that the standard Fayoum weir is adopted in this study. What are other feasible alternatives? What are the advantages of adopting this particular weir type over others in this case? How will this affect the results? The authors should provide more details on this. 6. It is mentioned in p.2 that nine models are adopted in this study. What are the other feasible	1. Noted. 2. Noted. 3. Some phrases have been added in the abstract and the introduction section. 4. The reason for using numerical simulations is now stated clearly in the manuscript and some other software packages which could have been used are now mentioned and more details are added in the introduction. 5. The Fayoum Standard weirs, which are a special type of narrow-crested rectangular weirs, are widely used in Egypt especially in Fayoum depression region. That's why we focused our work on this type . 6. The nine models represent the weirs with bottom outlet pipes possible configurations in the Fayoum region. The widths of weirs range from 2 to 10 m, the depths of weir are from 1 to 2 m. diameters of pipes were assumed from 0.25 the weir height to 0.75 the weir height. That's why nine models were developed and the results analyzed in the study. This is explicitly mentioned now in the manuscript.



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	alternatives? What are the advantages of adopting these particular models over others in this case? How will this affect the results? More details should be furnished. 7. It is mentioned in p.9 that the multivariate regression analysis is adopted to predict the maximum total deformation occurred on the weir body. What are other feasible alternatives? What are the advantages of adopting this particular analysis over others in this case? How will this affect the results? The authors should provide more details on this. 8. The discussion section in the present form is relatively weak and should be strengthened with more details and justifications. 9. Some assumptions are stated in various sections. More justifications should be provided on these assumptions. Evaluation on how they will affect the results should be made. 10. Moreover, the manuscript could be substantially improved by relying and citing more on recent literatures about real-life case studies of contemporary modelling techniques in water resources engineering such as the followings: ● Taormina, R., et al., "Neural Network River Forecasting with Multi-Objective Fully Informed Particle Swarm optimization," <i>Journal of Hydroinformatics</i> 17 (1): 99-113 2015. ● Wu, C.L., et al., "River Stage Prediction Based on a Distributed Support Vector Regression," <i>Journal of Hydrology</i> 358 (1-2): 96-111 2008. ● Cheng, C.T., et al., "Long-term prediction of discharges in Manwan Reservoir using artificial neural network models," <i>Lecture Notes in Computer Science</i> 3498: 1040-1045 2005.	7. The multivariate regression is the most common and straight forward technique, since the relationships are fairly linear. It attempts to develop an equation that can describe how elements in a vector of variables respond simultaneously to changes in others. The above statement is now added to the manuscript. 8. Additions and justifications are now added to the manuscript to strengthen the discussion in the results and discussion section. 9. Justifications of the assumptions are added to the manuscript. 10. The work in this manuscript focus on structural analysis of the weir body. And most canals in the irrigation system of Fayoum region, in Egypt, are controlled by barrages at its intakes and weirs along the canal to control water surface slopes. The references mentioned by the reviewer are dealing with neural network, reservoir forecasting, hydrological and water quality modeling which are all irrelevant to the manuscript. 11. The limitations and possible improvements are now added to the conclusion section.
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	● Chen, W., et al., "Intelligent manipulation and calibration of parameters for hydrological models," <i>International Journal of Environment and Pollution</i>, 28 (3-4): 432-447 2006. ● Muttill, N., et al., "Neural network and genetic programming for modelling coastal algal blooms," <i>International Journal of Environment and Pollution</i> 28 (3-4): 223-238 2006. ● Chau, K.W., "An ontology-based knowledge management system for flow and water quality modeling," <i>Advances in Engineering Software</i> 38 (3): 172-181 2007. 11. In the conclusion section, the limitations of this study, suggested improvements of this work and future directions should be highlighted.	
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		