

Proses Koresponding

Judul : Application of Specific Energy in Open Channels to Various Forms of Channel Constriction

Authors : RATNA MUSA^{1*}, TRIFFANDY M.W², AMALIA RUSALDY³

Corresponding : RATNA MUSA^{1*}

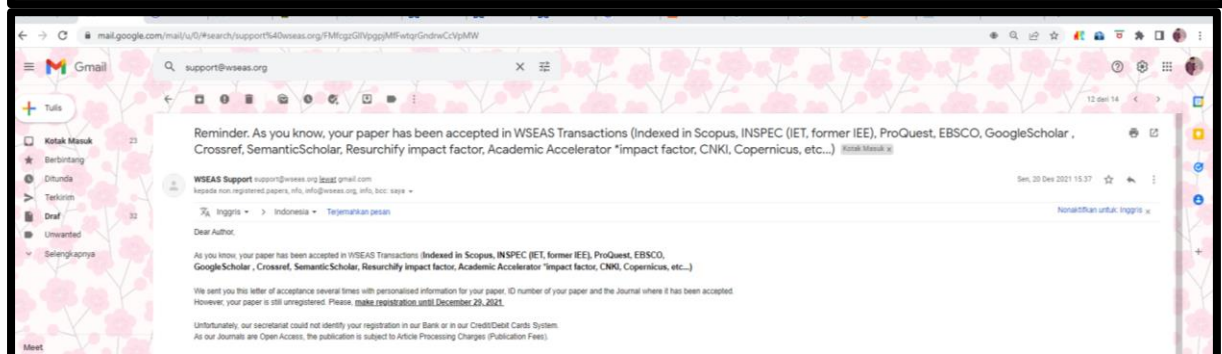
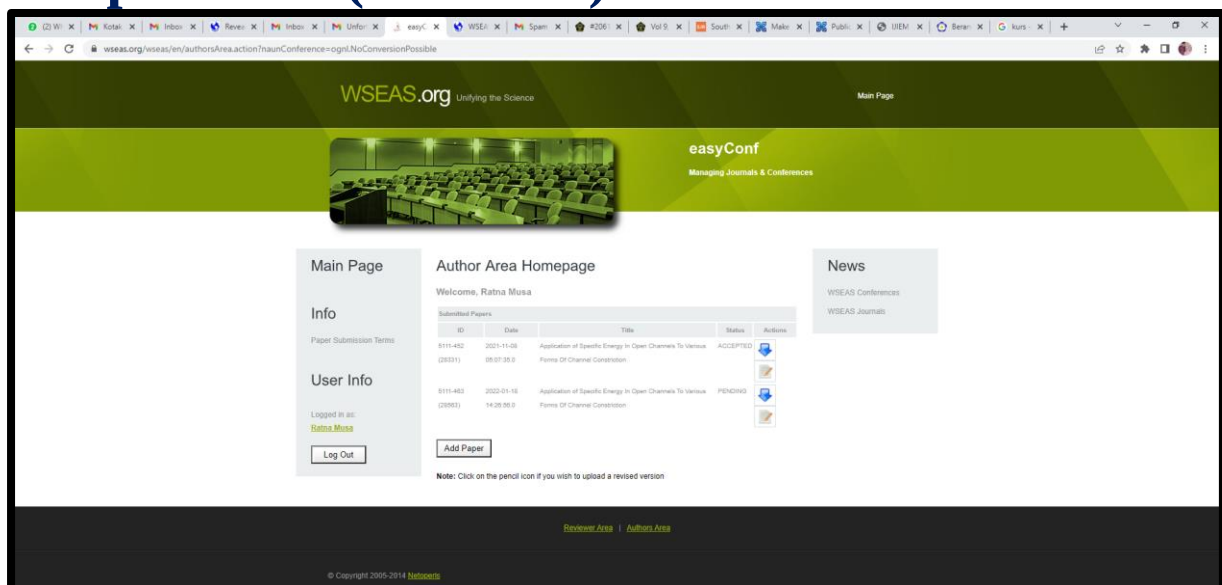
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1	Received	21 April 2021
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1. Laman Submit by system pada tanggal 21 April 2021 (Received)



2. Proses Revised dengan Pertanyaan Reviewer

R-[5111-463] [Kotak Masuk x](#)

WSEAS <wseas.headquarters@gmail.com>
kepada ratna.musa

Rab, 2 Feb 21.31

Inggris > Indonesia > [Terjemahkan pesan](#)

Nonaktifkan untuk: Inggris x

Dear Professor Ratna Musa,

The **reviewers' comments** are attached to this email.

Please revise your paper accordingly, log in to your account, click on the pencil icon next to your paper and upload your final version (overwrite the old version with the new one) for publication, until February 15, 2022.

Paper should be written according to the journal's paper format; <https://wseas.com/format.php>

In addition, please fill in and return to me via email the attached "CERTIFICATION docx" which certifies the evaluation and review process.

We remain at your disposal,

Best Regards

Maria Georgieva

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2 Lampiran

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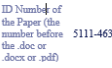
Kam, 3 Feb 11.00

Dear Maria Georgieva,

Please find our Certification below.

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Reviewer 1



ID Number of the Paper (the number before the .doc or .docx or .pdf) 5111-463

Title of the Paper Application of Specific Energy in Open Channels To Various Forms Of Channel Constriction

Comments and Remarks (minimum 500 characters)

Technical novelty regarding the results is evident thus I propose this article to be accepted with major revisions. The revisions and my remarks are focusing on the presentation of the issue, the lack of references and the overall English level which has a lot of small but important mistakes.

I really do not think the authors have proofread this article but giving that the test results are extensive and thorough, I think this paper should be given a chance.

English level is marginally OK, as no words exist to link the sentences and the lack of proper punctuation makes it really difficult to understand what the authors are trying to say. Please re-read the article and try to ameliorate the English level

References are really old. The most recent one is from 2015! Authors need to severely upgrade and rewrite the references part of their submission.

1. add more references
2. add more recent references from the last 5 years or so preferably from journals and conference proceedings

I would suggest that all of the provided references to be in English language or else provide a translation/the paper in English translation (e.g. *Th. Rehbock, Zur Frage des Bruckenstein* is German). *IFix* will help make the bibliography easily available to a more broad audience

References 8, 10, 11 are not cited? I can not find them in the text

When using references inside the text, the reference number should be gradually increasing by one. For example, see Page 6, where the references are 10, 13, 18. This is not correct, they should be 10, 11, 12 etc. Fix this throughout the whole text!

hence previous research has been used as a benchmark in this study, "expand more on this issue, please clarify how this research was used?"

"This paper focuses channel" excellent paragraph, move it to a new section as "Article Outline" and briefly mention the rest of the paragraphs, i.e. merge this new section with section 1.3.

(So, delete 1.3 from the text, add a new section "Article Outline" or "Aims and Objectives", move the text "this paper focuses channel" to the new section, in this new section add at the end the text of 1.3 section").

-Related work section is not at all a related work... "1.1. Related Work" should be change to something else for example "research procedures and methodologies"

-You should add a related work section and briefly explain the trends in bibliography and generally this subject. In order to help the authors, reviewers suggest that you read and cite some review papers on the subject and focus Channel Constriction in the energy sector. Lastly, I think it would be interesting to see here some real case studies such as examples of Channel Constriction papers for other countries / projects that exist.

-Figure 2 could be re uploaded at more dpi (it is a bit blurry replace with HD image)

-1.2. Our Contribution "transition ...constriction type, and why is there a huge gap between these words (page 4)

-page 4 "used abrupt type of narrowing by using several different channel widths, hence previous research has been used as a benchmark in this study which used three types of narrowing type along constriction, transition constriction type, and the narrowing Radius of the same channel width" this sentence is LITERALLY used 2 times page 1,4!

-2.1. Open channels "you should add references to this section...

-further explain equation 4 and 5. Why do you mention these formulas? I do not understand their importance

-2.3.1. Steady flow and unsteady flow "this section is a bit obvious for a researcher- someone familiar in this subject, maybe it could be omitted or at least remove equation 7 as it is pretty evident how the equation is used.

-Equation (7) cannot be used if uniformly non-uniform (non-uniform) flow debris along the channel due to overflow" why is that? please clarify

-Figures 6, 7, 8 seem like they are copied from a book. If you have not drawn them, please add citation.

-After reading "2.3. System classification" I think that a lot of figures exist and that generally this section could be shortened by adding a detailed Table with each unique characteristics and mathematical types.

-3. RESULTS AND DISCUSSION "unfortunately there is not a discussion part here. You simply present the tables. You need to mention more regarding your findings, why did you conduct these experiments, what was the expected behavior etc.

-Figure 9 -> I don't understand from what data this was created. Moreover, inside the legend m3 should be m^3

-Fig 10 is a bit blurry and distorted.

Furthermore, to my understanding the figures 9-12 derive from the above mentioned tables thus, I would like you to pinpoint exactly what was illustrated...

-Based on Table 5 and Fig. change "this is the meat and bones of the article. In the previous paragraphs you just present tables and figures.

1. Make sure all images are cited inside the text
2. Specify which table values you illustrate
3. In order to make fewer changes, rename "3. RESULTS AND DISCUSSION" to "3.

Table 5 and F...change ". This last section should be expanded a bit so as to be more informative for the reader. -CONCLUSION" I do not like to see conclusions with bullet points or enumeration, please consider changing it to a continuous <u>text</u>. -5. SUGGESTION " is small, move it to conclusion section and rename it as "Conclusion and Future Works" Are the Sessions and their Paragraphs well and clearly written? Which Sessions and which Paragraphs of this paper need extensions and clarifications? Please, specify Which mathematical equations in the article need clarifications? Which Theorems need clarifications and extensions? Are the mathematical theorems accompanied by the proper numerical examples? Please, specify. What Simulation / Statistics / Experiments / Experimental Analysis in the paper need extension and more clarifications? In which paragraphs? see comments above see comments above see comments above	if the Figures and Tables of the article are dully illustrated and presented inside the text? all tables are cited correctly For Experimental Work. Do you believe that these experiments were really <u>held</u>? 2 With what Equipment? Where? Are they accompanied with Photos, Tables and other Documentation? ? Do the authors have the Copyright of the Photos? For Articles in Biomedical, Financial and Social Sciences we demand strong and well-documented Statistics. Have the authors carried out and included the right Statistical tests like t-test, Chi Square etc? Please, check. Are the References connected with the main text of the article? Are they adequate? Do the authors have References from the last 10 years or they have obsolete References? NO, see comments above (a related work section is missing and the existing citations are really old, extensive rewritten must be done)
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use abbreviations without the necessary explanations? If - the authors use the abbreviation GOT, what GOT stands for? Final Recommendation Signature Reviewer 2 ID Number of the Paper (the number before the .doc or .docx or .pdf) 5111-463 Title of the Paper Application of Specific Energy In Open Channels To Various <u>Forms</u> Of Channel Constriction Comments and Remarks (minimum 500 characters) Dear Sir I have gone through the manuscript titled "Application of Specific Energy In Open Channels To Various Forms Of Channel Constriction" which is not well written and not formatted well. 1. The abstract have not methodology, results, and applications, the title is long, would you please try to change title 2. The introduction have not a theory about the title 3. The author has to explain why to give importance of this <u>research</u> 5. The problem are not explained in this manuscript well. 6. There is no proper explanation about this technique 7. The conclusion is poorly written 8. The references are not in APA format Are the Sessions and their Paragraphs well and The format of the manuscript is not well.	written? Which Sessions and which Paragraphs of this paper need extensions and clarifications? Please, specify Which mathematical equations in the article need clarifications? Which Theorems need clarifications and extensions? Are the mathematical theorems accompanied by the proper numerical examples? Please, specify. The mathematical equation are badly written What Simulation / Statistics / Experiments / Experimental Analysis in the paper need extension and more clarifications? In which paragraphs? This manuscript must be given a detail explanation. Can you check if the Figures and Tables of the article are dully illustrated and presented inside the text? Yes. For No
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Page 4 of 4

Experimental Work. Do you believe that these experiments were really held? With what Equipment? Where? Are they accompanied with Photos, Tables and other Documentation? Do the authors have the Copyright of the Photos?

For Articles in Biomedical, Financial and Social Sciences we demand strong and well-documented Statistics. Have the authors carried out and included the right Statistical tests like: t-test, Chi Square etc? Please, check.

Are the References connected with the main text of the article? Are they adequate? Do the authors have References from the last 10 years or they have obsolete References?

This is engineering articles

The references are not **not** in APA format

Do the authors use abbreviations without the necessary explanations? If the authors use the abbreviation GOT, what GOT stands for?

Final Recommendation on

Reviewer 3

ID Number of the Paper (the number before the .doc or .pdf)

5111-463

Title of the Paper

Application of Specific Energy In Open Channels To Various Forms Of Channel Constriction

Comments and Remarks (minimum 500 characters)

This publication describes the phenomenon of the hydraulic flow of these buildings. Each flow condition, moderate, and after passing through each building has its own characteristics or tendencies. This study aims to analyze the shrinkage ignition characteristics. Flow velocity measurement is measured using a current meter and float instrument to obtain data: water level, flow velocity, observation review points before and after channel narrowing. Understanding the flow characteristics of a narrow canal is used to consider the technical design of the canals, especially irrigation canals. Analysis shows that the flow of water through the narrowing undergoes specific energy changes. The greatest loss of specific energy occurs in a type of sudden constriction. The expected results correlate equally with the experimental data from this and other studies

Are the Sessions and their Paragraphs well

2.3. System classification 3. RESULTS AND DISCUSSION

written? Which Sessions and which Paragraphs of this paper need extensions and clarifications?

Please, specify Which mathematical equations in the article need clarifications? Which Theorems need clarifications and extensions? Are the mathematical theorems accompanied by the proper numerical examples? Please, specify.

What Simulation / Statistics / Experiments / Experimental Analysis in the paper need extension and more clarifications? In which paragraphs?

Can you check if the Figures and Tables of the article are fully illustrated and presented inside the text?

For Experimental Work. Do you believe that these experiments were really held.

the Figures and Tables of the article are suitably illustrated and presented within the text

these experiments have indeed been carried out

Equipment? Where? Are they accompanied with Photos, Tables and other Documentation? Do the authors have the Copyright of the Photos?

For Articles in Biomedical, Financial and Social Sciences we demand strong and well-documented Statistics. Have the authors performed and included the right statistical tests the authors carried out and included the right Statistical tests like: t-test, Chi Square etc? Please, check.

Are the References connected with the main text of the article? Are they adequate? Do the authors have References from the last 10 years or they have obsolete References?

Do the authors use abbreviations without the necessary explanations? If the authors use the abbreviation GOT, what GOT stands for?

the references are adequate

Recommendation	numerical examples? Please, specify.
Reviewer 4	What Simulation / Statistics / Experiments / Experimental Analysis in the paper need extension and more clarifications? In which paragraphs? The Experimental Analysis in the paper no need extension. Can you check if the Figures and Tables of the article are dully illustrated and presented inside the text? The figures accompanying the analyzes are correctly designed, clear and suggestive, highlighting the main elements of the research. For Experimental Work. Do you believe that these experiments were really held, ? With what Equipment? Where? Are they accompanied with Photos, Tables and other Documentation? Do the authors have the Copyright of the Photos? I believe that these experiments were really held. They are accompanied with Photos, Tables and other Documentations. For Articles in Biomedical, Financial and Social Sciences we demand strong and well-documented Statistics. Have the authors carried out and It is not an Articles in Biomedical, Financial and Social Sciences.
ID Number of the Paper (the number before the .doc or .docx or .pdf) 5111-463 Title of the Paper Application of Specific Energy in Open Channels To Various Forms Of Channel Construction Comments and Remarks (minimum 500 characters) This paper can be published because it is sufficiently original, sufficiently comprehensive and critical. The organization of the article is a classic one, scientifically correct. Are the Sessions and their Paragraphs well and clearly written? Which Sessions and which Paragraphs of this paper need extensions and clarifications? The paragraphs and subparagraphs of the article were judiciously used to present, define and clarify the issues analyzed. There is a logical thread of presentation and argumentation that makes the article easy to follow. Please, specify Which mathematical equations in the article need clarifications? Which Theorems need clarifications and extensions? Are the mathematical theorems accompanied by the proper The mathematical equations in the article no need clarifications.	

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included the right Statistical tests like: t-test, Chi Square etc? Please, check.

Are the References connected with the main text of the article? Are they adequate? Do the authors have References from the last 10 years or they have obsolete References?

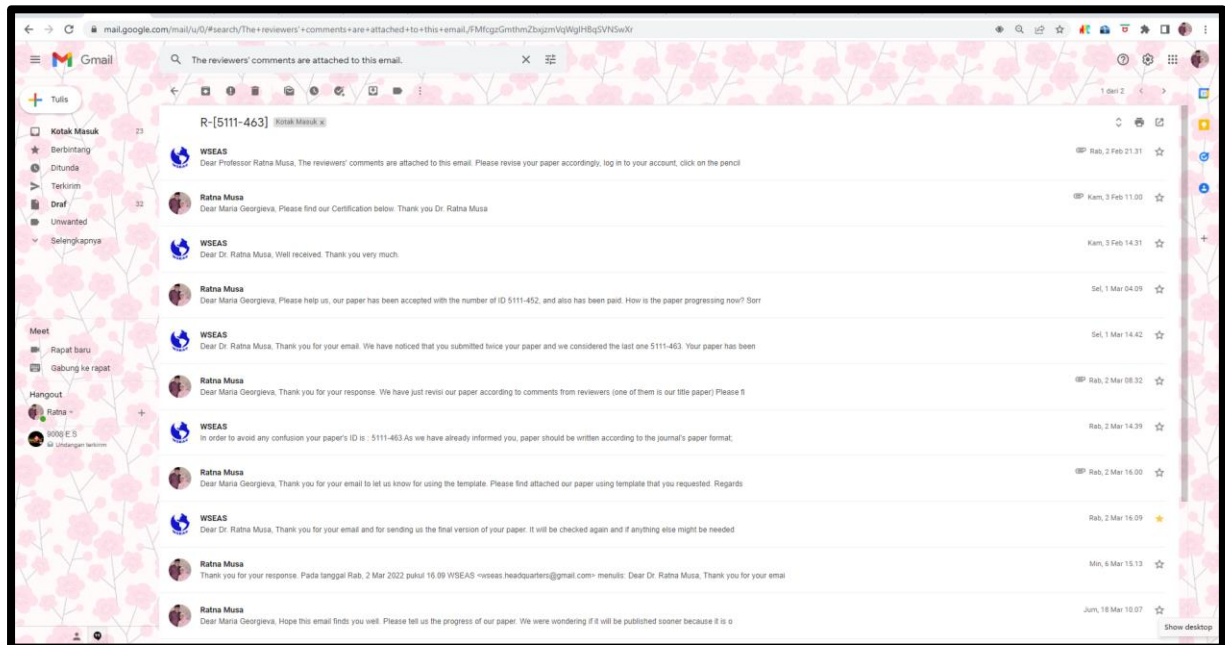
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Do the authors use abbreviations without the necessary explanations? If the authors use the abbreviation GOT, what GOT stands for?

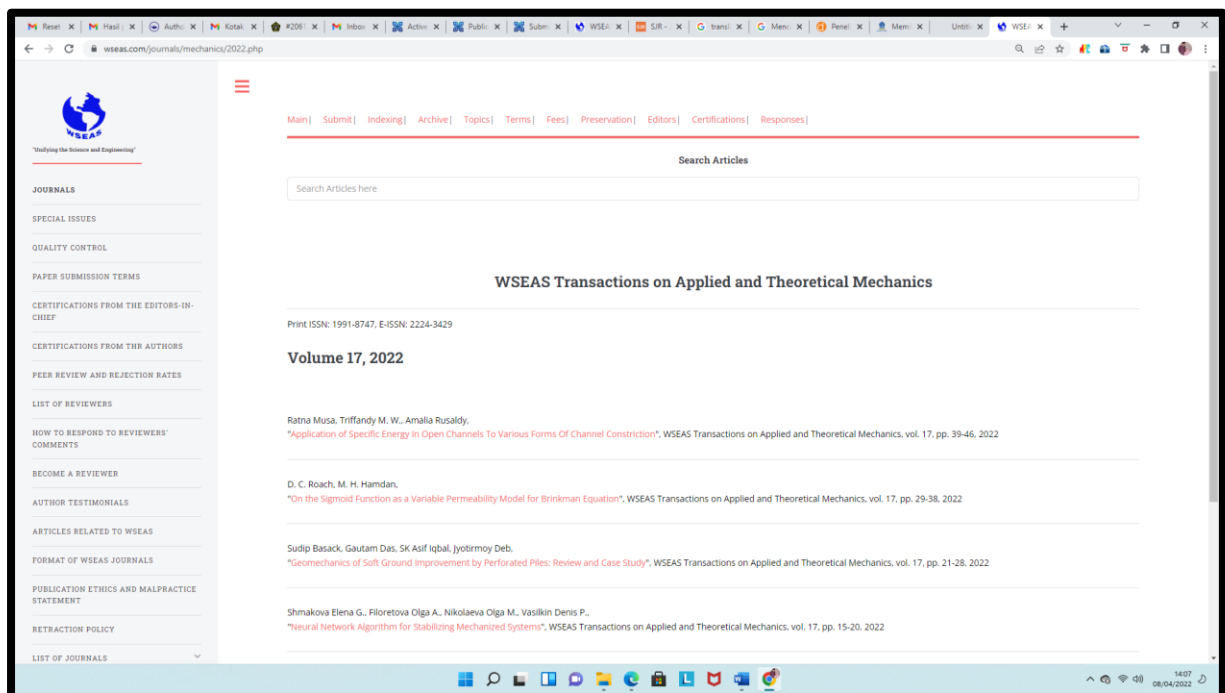
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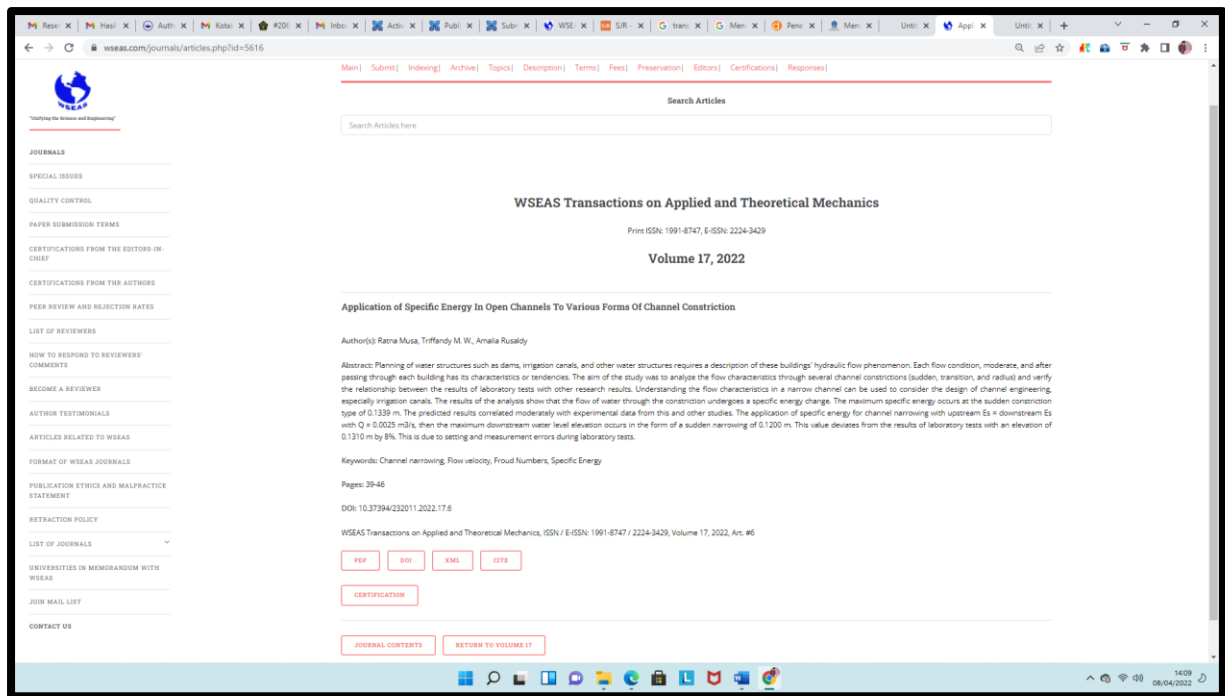
Final Recommendation

3. Proses Yang dilakukan Sampai Accepted dan Final Proofreading (2 Febuari sampai 6 maret 2022)



4. Publish 26 Maret 2022 di Laman WSEAS





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Triffandy M. W., Amalia Rusaldy

Application of Specific Energy in Open Channels to Various Forms of Channel Constriction

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Abstract: - Planning of water structures such as dams, irrigation canals, and other water structures requires a description of these buildings' hydraulic flow phenomenon. Each flow condition, moderate, and after passing through each building has its characteristics or tendencies. The aim of the study was to analyze the flow characteristics through several channel constrictions (sudden, transition, and radius) and verify the relationship between the results of laboratory tests with other research results. Understanding the flow characteristics in a narrow channel can be used to consider the design of channel engineering, especially irrigation canals. The results of the analysis show that the flow of water through the constriction undergoes a specific energy change. The maximum specific energy occurs at the sudden constriction type of 0.1339 m. The predicted results correlated moderately with experimental data from this and other studies. The application of specific energy for channel narrowing with upstream E_s = downstream E_s with $Q = 0.0025 \text{ m}^3/\text{s}$, then the maximum downstream water level elevation occurs in the form of a sudden narrowing of 0.1200 m. This value deviates from the results of laboratory tests with an elevation of 0.1310 m by 8%. This is due to setting and measurement errors during laboratory tests.

Key-Words: Channel narrowing, Flow velocity, Froud Numbers, Specific Energy

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1 Introduction

An open channel is a free-flowing water channel. Open channels can be distinguished into two types, namely artificial and natural. Open channels are found both on irrigation channels, technical, semi-technical, and natural channels in non-prismatic conditions. In a channel with a non-prismatic drainage channel, water flow changes such as altitude, velocity, channel width, water discharge, and other flow behavior. Some of the causes of the non-prismatic cross-section are the connection of two cross-sections, other buildings such as bridge pillars, or other causes that alter the channel's cross-section. Flow analysis of non-prismatic channels requires precision due to changes in flow characteristics. One example is channel narrowing, which causes altitude, velocity, and energy in the flow to change. The flow of energy affects the channel's smooth flow, which can disrupt water flow distribution that can harm. This fact needs attention. The discussion of the flow in the case of channel narrowing in this paper tries to disentangle the problem through measurement and testing on an open channel in the presence of constriction. Referring to the law of continuity, when the flow of water flows on a narrow section of the channel, it

can increase the flow rate and energy. The narrowing of the channel cross-section becomes one of the factors to increase the flow and energy velocity. From previous research, [1] project is to establish general design criteria for optimal hydraulic conditions to avoid sediment depositions in the tunnel and keep the resulting abrasion damages at a minimum. In [2] propose a depth-discharge relationship and energy-loss coefficient for a subcritical, equal-width, right-angled dividing flow over a horizontal bed in a narrow aspect ratio channel. [3] Used abrupt type of narrowing by using several different channel widths; hence previous research has been used as a benchmark in this study, which used three types of narrowing types: constriction, transition constriction type, and the narrowing Radius of the same channel width. This study focuses on analyzing changes in flow characteristics due to channel narrowing (sudden, transition, and radius). We argue that applying it to the inspection model should solve the following two problems: (1) How to know the flow characteristics of different types of constriction, and (2) How to apply specific energy in determining the downstream water level (after constriction) with the assumption that upstream E_s = downstream E_s , then

