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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
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Judul Jurnal Ilmiah (Artikel)	:	Flow characteristics by particle image velocimetry in liquefied natural gas vaporizer model with several baffles		
Jumlah Penulis	:	5		
Status Pengusul	:	penulis ke-3		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Journal of Central South University of Technology (English Edition)
		b. Nomor ISSN	:	2095-2899 (Print) 2227-5223 (Online)
		c. Vol, No., Bln Thn	:	18, 5, October 2011
		d. Penerbit	:	Central South University (Springer Nature Switzerland)
		e. DOI artikel (jika ada)	:	https://doi.org/10.1007/s11771-011-0893-1
		f. Alamat web jurnal	:	https://link.springer.com/article/10.1007/s11771-011-0893-1
		Alamat Artikel	:	http://eprints.undip.ac.id/79420/2/Fullpaper_Flow_Characteristics_by_particle_(Berkah_F).pdf
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Artikel ini berisi tentang penelitian secara eksperimental tental aliran di sisi shell untuk sebuah shell and tube vaporizers. Penelitian dilakukan secara eksperimental dengan Particle Image Velocimetry. Hasil dibahas dengan menyajikan grafik yang cukup detail, sehingga hasil mempunyai kontribusi untuk lebih mengerti aliran fluida di sisi Shell (tabung). Meskipun demikian, data-data dibahas kurang komprehensif, karena hanya 2 dari 14 referensi yang dicitasi dalam pembahasan.

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Semarang, 24 Maret 2020
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Prof. Dr. Mohammad Djaeni, S.T., M.Eng.
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Bidang Ilmu : Teknik Kimia

LEMBAR
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		Alamat Artikel	:	http://eprints.undip.ac.id/79420/2/ Fullpaper_Flow_Characteristics_by_particle_(Berkah_F).pdf
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2. **Ruang lingkup dan kedalaman pembahasan:**
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3. **Kecukupan dan kemutakhiran data/informasi dan metodologi:**
   Data cukup dan mutakhir. Metodologi eksperimental juga jelas, dengan menggunakan peralatan PIV dan CCD Camera.

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JURNAL tidak terdaftar SJR, SCOPUS
max 30

$\frac{30}{40} \times 2,35 = 1,76$

Surakarta, 2 Maret 2020
Reviewer 2

Prof. Dr. techn. Suyitno, S.T., M.T.
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Journal of Central South University of Technology (English Edition)
Volume 18, Issue 5, October 2011, Pages 1719-1725

Flow characteristics by particle image velocimetry in liquefied natural gas vaporizer model with several baffles (Article)

Chung, H.S.[a], Sayeed-Bin-Asad, S.M.[b], Fajar, B.[c], Shin, Y.H.[b], Jeong, H.M.[a]

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[c]Department of Mechanical Engineering, University of Diponegoro, Semarang, Indonesia

Abstract

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Shell-and-tube vaporizers are the most commonly used and dominated types of vaporizers in liquefied natural gas (LNG) realm. Due to efficient performance, shell-side flow in this type of vaporizers has received considerable attention and has been investigated extensively. However, the detailed flow structure in the shell needs to be determined for reliable and effective design. Therefore, the objective of this study was to clarify the flow structure in shell by particle image velocimetry (PIV). Experiments were conducted using two types of model; 15% baffle cut having inlet and outlet positions in the direction of 90° to the cut and 30% baffle cut having inlet and outlet positions in the direction of 180° to the cut. Each test section is 169 mm in inner diameter and 344.6 mm in length. The flow features were characterized in different baffle cuts with regards to the velocity vector field and velocity distribution. The results show that the flow characteristics of 15% baffle cut type vaporizer are comparable to those of 30% baffle cut type vaporizer.

SciVal Topic Prominence

Topic: Heat transfer | Nusselt number | In-line tube

Prominence percentile: 62.067

Author keywords

Liquefied natural gas | Particle image velocimetry | Turbulence | Vaporizer | Vortex

Indexed keywords

Engineering uncontrolled terms: Flow characteristic | Flow features | In-shell | Inner diameters | Particle image velocimetries | Particle image velocimetry | Shell-and-tube | Shell-side flow | Test sections | Vaporizer | Velocity vector field | Vortex

Engineering controlled terms: Flow structure | Flow visualization | Gas fuel purification | Shells (structures) | Turbulence | Velocimeters | Velocity measurement

Engineering main heading: Liquefied natural gas

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Received date: 2011–02–09; Accepted date: 2011–03–28 Corresponding author: H. M. Jeong, Professor, PhD; Tel: +82–55–640–3184; Fax: +82–55–640–3188; E-mail: hmjeong@gnu.ac.kr

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generator with changing lateral pitch geometry

Delgado, M. , Hassan, Y.A. , Anand, N.K.
(2019) International Journal of Heat and Mass Transfer

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5

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Springer

Nonlinear correction of photoelectric displacement sensor based on least square support vector machine

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Abstract: A model of correcting the nonlinear error of photoelectric displacement sensor was established based on the least square support vector machine. The parameters of the correcting nonlinear model, such as penalty factor and kernel parameter, were optimized by chaos genetic algorithm. And the nonlinear correction of photoelectric displacement sensor based on least square support vector machine was applied. The application results reveal that error of photoelectric displacement sensor is less than 1.5%, which is rather satisfactory for nonlinear correction of photoelectric displacement sensor.

Key words: least square support vector machine; position; photoelectric displacement sensor; nonlinear correct

1 Introduction

Optical displacement sensor is widely used on the on-line measurement for boundary position in the industrial production and experiments such as steel rolling, textile and printing. It is also used to ensure the successful completion of tape, trimming border and overprinting pattern or to ensure a better damping effect and vibration isolation.

In theory, the relationship between input (displacement) and output (voltage) of the optical displacement sensor [1−3] is non-linear. The input (displacement)−output (voltage) data from optical measurement system must be corrected to improve the measurement accuracy. In the practical application, piecewise linear correction methods are commonly used. However, they are usually short of preciseness in some situations that require higher precision.

In order to improve the measurement accuracy of photoelectric sensors, researchers have made great efforts by various experimental and digital correction methods [4−11]. But, the phenomenon of inadequate precision still exists, which cannot meet the actual needs for testing high precision displacement parameters.

The support vector machine (SVM) is a new machine learning method [12−15], which is established on statistical learning theory, based on the structural risk minimization principle, and possesses good generalization ability.

The limited sample learning problem has shown a lot of performance better than the existing methods. As SVM algorithm is a convex quadratic optimization problem, it can guarantee to find the global optimal solution, and can solve the problem with the small sampling number, nonlinear relation and high dimension. Therefore, the least square support vector machine, (LS-SVM) [13], a nonlinear compensation method, is proposed, which can make optical displacement sensor linearized. The corrected network can be processed according to the linear characteristics, and the measurement accuracy is improved.

2 Nonlinear corrections of photoelectric displacement sensor based on LS-SVM

2.1 Principle of optical displacement sensor

Optical displacement sensor is a lateral semiconductor-based photo-detector device. It is a non-split-type photoelectric conversion device in a position to continuously detect the light point.

Practical optical displacement sensor generally uses the PIN structure, as shown in Fig.1. Its surface is P layer on light-sensitive side with output electrode on each side, the middle is I layer, and the bottom layer is highly doped N, to reverse bias voltage.

When the incident lights reach a point of the photosensitive surface of optical displacement sensor,

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Springer

Reliability analysis of earth slopes using hybrid chaotic particle swarm optimization

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Abstract: A numerical procedure for reliability analysis of earth slope based on advanced first-order second-moment method is presented, while soil properties and pore water pressure may be considered as random variables. The factor of safety and performance function is formulated utilizing a new approach of the Morgenstern and Price method. To evaluate the minimum reliability index defined by Hasofer and Lind and corresponding critical probabilistic slip surface, a hybrid algorithm combining chaotic particle swarm optimization and harmony search algorithm called CPSOHS is presented. The comparison of the results of the presented method, standard particle swarm optimization, and selected other methods employed in previous studies demonstrates the superior successful functioning of the new method by evaluating lower values of reliability index and factor of safety. Moreover, the presented procedure is applied for sensitivity analysis and the obtained results show the influence of soil strength parameters and probability distribution types of random variables on the reliability index of slopes.

Key words: reliability analysis; stability assessment; earth slopes; particle swarm optimization; harmony search

1 Introduction

Stability assessment of earth slope is one of the fundamental problems of geotechnical engineering and has been studied extensively for a long time. Traditionally, deterministic methods are used for the safety evaluation of earth slopes and the factor of safety is considered as an index of stability. In a deterministic procedure, variables are represented by single values. The significant variables involved in the slope stability analysis include the soil strength, soil density, and pore water pressure. Representing these variables by single values implies that the values are predicted with certainty, and the case is seldom. Slope stability problems are characterized by many uncertainties, and deterministic methods are unable to handle the uncertainties in the analysis. The slope may fail even though the factor of safety calculated from the deterministic model is greater than unity. This situation indicates a need for a more objectively-structured and quantitative approach toward handling uncertainties involved in the calculations. The probabilistic approach is a natural choice for this type of analysis, because it allows for the direct incorporation of uncertainties into the analytical model. In this approach, safety of a slope is measured by the reliability index or by the probability of failure, instead of by the classical factor of safety.

The common approach to estimate the reliability index of earth slope is the mean-value first-order second-moment (MFOSM) method [1]. In MFOSM, the performance function is expanded for the mean values of the parameters, and only the first order terms are kept. Moreover, to calculate the reliability index, the partial derivative of performance function is needed. Because the performance function in slope stability analysis is usually implicit, the partial derivatives of performance function are frequently approximated numerically [2]. To overcome the problem of dependence of the reliability index on performance function, HASOFER and LIND [3] proposed an invariant definition of the reliability index. They defined the reliability index (β) as the shortest distance from the origin of the standard normal space to the boundary limit state. The reliability analysis of earth slope based on the HASOFER−LIND reliability index (β_{HL}) is an optimization problem, and the solution is the minimum reliability index or the maximum probability of failure.

The conventional optimization technique is called a gradient algorithm, which is based on the gradient information of the objective function and constraints. However, obtaining the gradient information may be costly or even impossible. But another kind of optimization technique, known as heuristic algorithm, is not restricted in the aforementioned manner. Moreover, heuristic optimization provides a robust and efficient

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8. OriginalPaper

Influence of features of natural soft clay on behaviour of embankment

Zhen-yu Yin 尹振宇, *M. Karstunen*, *Jian-hua Wang 王建华*... Pages 1667-1676

9. OriginalPaper

Combined effect of steel fibres and steel rebars on impact resistance of high performance concrete

Xiang-yu Chen 陈相宇, *Yi-ning Ding 丁一宁*, *C. Azevedo* Pages 1677-1684

10. OriginalPaper

Comparison on construction of strut-and-tie models for reinforced concrete deep beams

Yi-ke Qiu 仇一颗, *Xia Liu 刘霞* Pages 1685-1692

11. OriginalPaper

Critical crack tip opening displacement of different strength concrete

Bing Wang 王冰, *Xiu-fang Zhang 张秀芳*, *Jian-guo Dai 戴建国*... Pages 1693-1699

12. OriginalPaper

Method to analyze wrinkled membranes with zero shear modulus and equivalent stiffness

Ran Zhao 赵冉, *De-min Wei 魏德敏*, *Wen-bo Sun 孙文波* Pages 1700-1708

13. OriginalPaper

Comparison of vibrations induced by excavation of deep-buried cavern and open pit with method of bench blasting

Wen-bo Lu 卢文波, *Peng Li 李鹏*, *Ming Chen 陈明*... Pages 1709-1718

14. OriginalPaper

Flow characteristics by particle image velocimetry in liquefied natural gas vaporizer model with several baffles

H. S. Chung, *S. M. Sayeed-Bin-Asad*, *Berkah Fajar*... Pages 1719-1725

15. OriginalPaper

Numerical simulation on melt flow with bubble stirring and temperature field in aluminum holding furnace

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16. OriginalPaper

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Bing-chu	YANG	School of Physics and Electronics	Central South University	Hunan	China
Chun-hua	YANG	School of automation	Central South University	Hunan	China
Hua	YANG	Central South University Press	Central South University	Hunan	China
Xiao-li	YANG	School of Civil Engineering	Central South University	Hunan	China
Qing-yuan	ZENG	School of Civil Engineering	Central South University	Hunan	China
Zhong-wei	ZHAO	School of Metallurgy and Environment	Central South University	Hunan	China
Hong	ZHONG	Chemistry and Chemical Engineering	Central South University	Hunan	China
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