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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel) : Reservoir Operation to Minimize Sedimentation
 Jumlah Penulis : 3 orang (**Dyah Ari Wulandari**, Djoko Legono, Suseno Darsono)
 Status Pengusul : penulis ke-1 dan korespondensi
 Identitas Jurnal Ilmiah : a. Nama Jurnal : International Journal of Science and Engineering (IJSE)
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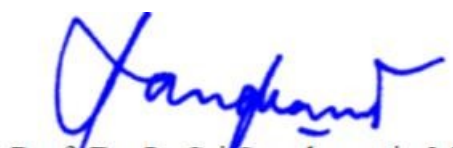
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Nilai pengusul = 60% x 16,85 = 10,11	10,02	10,2	10,11

Reviewer I



Prof. Dr. Ir. Suripin, M.Eng
 NIP. 196004271987031001
 Unit kerja : Departemen Teknik Sipil FT UNDIP

Reviewer II



Prof. Dr. Ir. Sri Sangkawati, M.S.
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Artikel telah disiapkan cukup cermat, dan sesuai dengan standar normatif karya ilmiah akademis, metode yang digunakan sesuai dengan konsep system pengelolaan dan/atau operasi waduk. Tulisan terstruktur dengan baik: abstrak, pendahuluan, metode, hasil, pembahasan, dan kesimpulan serta saran. Fokus penelitian ini adalah menentukan pola operasi waduk yang optimum, dengan meminimalkan endapan sedimen di waduk. Adanya struktur tambahan berupa waduk internal penampung sedimen serta spillway baru untuk memflushing sedimen.

2. Ruang lingkup dan kedalaman pembahasan:

Ruang lingkup dipaparkan dengan cukup jelas, baik di abstrak maupun isi, namun pembahasan kurang mendalam, tidak banyak melibatkan referensi yang digunakan dalam artikel ini. Kelangkaan data hasil observasi sedimentasi waduk setelah adanya bangunan tambahan tersebut, maka hasil optimasi belum dapat divalidasi dengan hasil observasi. Kebaruan dari artikel ini adalah pola operasi waduk dengan memperhatikan laju sedimentasi waduk.

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International Journal of IJCE diterbitkan oleh Fakultas Teknik UNDIP, adalah jurnal interdisiplin, terindex pada DOAJ, Crossred, dan Google Scholar. Jurnal mempunyai prosedur review yang cukup memadai dan terbit 4 kali setahun secara reguler. Hasil uji indikasi plagiasi dengan hasil similarity index 6%. Bidang karya ilmiah segaris dengan bidang keahlian serta pendidikan formal pengusul.

Semarang, 27 Januari 2022

Reviewer 1

Prof. Dr. Ir. Suripin, M.Eng

NIP. 196004271987031001

Unit Kerja : Departemen Teknik Sipil FT UNDIP

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Nilai Pengusul = 60% x 17 = 10,2				

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Unsur artikel dalam jurnal lengkap terdiri dari Title, Abstract, Introduction, Description (study area), Methods, Result and Discussion, Conclusion, Acknowledgments, Reference. Judul sesuai dengan isi artikel. Sebagai penulis pertama

2. Ruang lingkup dan kedalaman pembahasan:

Lingkup kajian adalah optimasi operasi Waduk Wonogiri setelah dibangun pelimpah baru. Kategori termasuk dalam studi kasus. Belum tampak adanya rujukan dalam pembahasan hasil.

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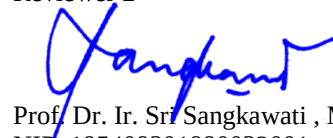
Artikel didukung oleh referensi primer yang cukup dengan 29% terbitan kurang dari lima tahun. Metode penelitian diuraikan secara teoritis lengkap. Optimasi menggunakan program CSUDP.

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Pada edisi ini, kategori terbitan jurnal baik. Tim editor dari empat negara, kontribusi penulis dari dua negara. Turniti similarity index 6%.

Semarang, 7 Pebruari 2022

Reviewer 2



Prof. Dr. Ir. Sri Sangkawati, MS.
 NIP. 195409301980032001

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Parameterization adaption for 3D shape optimization in aerodynamics

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Abstract - When solving a PDE problem numerically, a certain mesh-refinement process is always implicit, and very classically, mesh adaptivity is a very effective means to accelerate grid convergence. Similarly, when optimizing a shape by means of an explicit geometrical representation, it is natural to seek for an analogous concept of parameterization adaptivity. We propose here an adaptive parameterization for three-dimensional optimum design in aerodynamics by using the so-called “Free-Form Deformation” approach based on 3D tensorial Bézier parameterization. The proposed procedure leads to efficient numerical simulations with highly reduced computational costs.

Key Words - Numerical shape optimization, Free-Form Deformation, self-adaptive algorithm, compressible aerodynamics.

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1. Introduction

Within few years, numerical shape optimization is playing a great role in aerodynamic aircraft design. It enables to design and improve the shape of some or all of the components of the aircraft by minimising a cost functional subject to physical and geometrical constraints. This cost function trusts in the prior solution of a complex set of partial-differential equations (PDEs), such as those governing compressible aerodynamics (e.g. the Euler equations). Whence, the optimization process suffers from the high computational effort for the flow simulations around 3D configurations when the accuracy requirement is high. Thus, our efforts is mostly concentrated on improving the convergence rate of the numerical procedures both from the viewpoint of cost-efficiency and accuracy by handling the parametrization of the shape to be optimized.

When solving a PDE problem numerically, a certain mesh-refinement process is always implicit, and very classically, mesh adaptivity instead of, or in conjunction with increasing the number of degrees of freedom, is a very effective means to accelerate grid convergence. Similarly, when optimizing a shape by means of an explicit geometrical representation, as we advocate, it is natural to seek for an analogous concept of parameterization adaptivity. We propose here a self-

adaptive procedure for a three-dimensional optimum-design in aerodynamics by using the so-called Free-Form Deformation (FFD) method [12]. This approach is studied initially in the framework of the Bézier parametrization and applied to a geometrical arc reconstruction [3]. This paper is organized as follows. sections 2.1 introduces some properties of the classical Bézier parameterization. Then, we recall the concept of Free-Form Deformation which allows to extend the concept of shape representation to three-dimensional cases. In section 3, we present the notion of parametrization adaption within the framework of FFD approach. We apply the self-adaptivity approach to optimum shape design in 3D aerodynamics. Finally, we conclude and give some perspectives.

2. Shape representation

2.1 Bézier parameterization

We begin with the simplest situation of a two-dimensional geometry for which we employ a Bézier shape representation:

$$x(t) = \sum_{k=0}^n B_n^k(t) x_k, \quad y(t) = \sum_{k=0}^n B_n^k(t) y_k$$

in which the parameter t varies from 0 to 1, n is the degree of the parameterization,



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*The Effects of Dietary Neutral Detergent Fiber Ratio from Forage and Concentrate on The Dietary Rumen Degradability and Growth Performance of Philippine Native Goats (*Capra hircus* Linn.)*

Dwiatmoko Nugroho¹⁾, Sunarso¹⁾, Cesar C. Sevilla²⁾, and Amado A. Angeles²⁾

¹⁾ Master program in Animal Science, Faculty of Animal Science and Agriculture, Diponegoro University, Semarang 50275

²⁾ Animal Science and Dairy Cluster, [University of the Philippines Los Baños](#)

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Abstract — This research's objective was to determine the dietary rumen degradability and growth performances of goats fed dietary treatments. 18 native female goats (live weight of 7.96 ± 2.21 kg) were grouped into 6 classes for the feeding trial and 3 male mature goats with rumen cannula were used for the in situ digestibility. The three dietary treatments were: T1 - 72:28 Forage-Concentrate NDF ratio; T2 - 64:36; and T3 - 57:43. The rate of rumen degradability of DM and CP at 0 hours, potentially degradable fraction (b) and the rate of degradation of b were not affected by dietary treatments. The different ratios of NDF in the diets significantly affected the intake of DM, CP and NDF from forage and concentrates. Treatment diets affected the total intake of DM, CP and NDF of the animals. However, growth performance was not affected by the treatments showing the same production efficiency. This means that diets given to native goats with ratio of forage NDF of 72.07% can be applied since the value of the output and efficiency of feed utilization had the same value compared to diets ratio of forage NDF of 57.21%.

Keywords — Feed utilization; Forage NDF; Goat; and Ration

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I. INTRODUCTION

Farmers use high proportion of concentrates in the ration to accelerate the growth and production of ruminants. Although it has a positive impact on productivity, the use of excessive concentrate will lead to an increased production cost. Approximately 60% of the cost of production can be attributed to the concentrates fed to the animals (Chantaprasarn and Wanapat, 2008).

Nutrients are needed for the maintenance and production of animals. Aside from crude protein (CP), energy and minerals, the content of neutral detergent fiber (NDF) in the feed ration should also be considered. The sources for NDF are concentrates and forage. The proportion of forage NDF in the ration also plays a role in ruminant productivity. It is associated with chewing activity, saliva production, fermentation rate and yield, and digestibility of feed. Chewing time is highly influenced by NDF content, rather than with the particle size (PS) of forage (Beachemin, 1991 cited by Moon et al., 2004). Feed rations with sufficient NDF content from roughages or forage can be given to dairy

animals to maximize production and maintain health by sustaining a stable environment in the rumen (Tafaj et al., 2005).

The level and ratio of NDF in the diet can be used as standard to formulate proportion of forage and concentrate in the diets. With the optimized value of NDF, it can improve the performance of ruminant. In general, optimizing forage as source of NDF will indirectly decrease production costs while increasing revenue without reducing the quality and quantity of production. Theoretically, the value of NDF from forage is more useful by around 50% than concentrates (NRC, 2001). The ratio of forage and concentrate of the diet should contain around 75% forage NDF but in temperate regions, the minimum NDF level is around 25% to 28%. Because of the poor quality of forage in the tropics, this recommended NDF level is relatively difficult to maintain. A minimum of dietary NDF level (25%) and proportion of forage NDF (75% to 60%) in the diet still provides sufficient utilization of fiber for production and maintains fat corrected milk (Kanjapruithipong et al., 2001).