

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : PROSIDING INTERNASIONAL

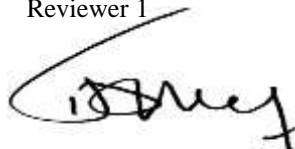
Judul Prosiding (Artikel) : Variance gamma for stock model performance with excess kurtosis
 Nama/ Jumlah Penulis : A Hoyyi, Tarno, D A I Maruddani, R Rahmawati
 Status Pengusul : penulis ke-2
 Identitas Prosiding : a. Nama Prosiding : Journal of Physics: Conference Series
 10th International Seminar on New Paradigm and
 Innovation of Natural Sciences and its Application
 (ISNPINSA) 2020 24-25 September 2020, Indonesia
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Kategori Publikasi Prosiding : Prosiding Internasional terindek pada scimagojr dan scopus
 (beri ✓ pada kategori yang tepat) Prosiding Internasional terindek scopus, IEEE Eexplore
 Prosiding Nasional

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Komponen Yang Dinilai	Nilai Reviewer		Nilai Rata-Rata
	Reviewer 1	Reviewer 2	
a. Kelengkapan unsur isi Prosiding (10%)	1,5	1,5	1,5
b. Ruang lingkup dan kedalaman pembahasan (30%)	5,5	5	5.25
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	5,5	5	5.25
d. Kelengkapan unsur dan kualitas terbitan/ Prosiding (30%)	5,5	5,5	5.5
Total = (100%)	18	17	17,5
Nilai Pengusul = 40% x 17,5 / 3 = 2,33			

Semarang,
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Prof. Dr. Widowati, S.Si., M.Si
 NIP. 196902141994032002
 Unit Kerja: FSM UNDIP
 Bidang Ilmu: Matematika

Reviewer 2



Nama : Prof. Dr. Sunarsih, M.Si
 NIP. 195809011986032002
 Unit Kerja : FSM Undip
 Bidang Ilmu: Matematika

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Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai	Nilai Maksimal Prosiding			Nilai Akhir Yang Diperoleh
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	30	<input type="checkbox"/>	<input type="checkbox"/>	
a. Kelengkapan unsur isi Prosiding (10%)	3			1,5
b. Ruang lingkup dan kedalaman pembahasan (30%)	9			5,5
c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%)	9			5,5
d. Kelengkapan unsur dan kualitas terbitan/ Prosiding (30%)	9			5,5
Total = (100%)	30			18
Nilai Pengusul = 40% x 18 / 3 = 2,4				

Catatan Penilaian artikel oleh Reviewer :

1. Kesesuaian dan kelengkapan unsur isi prosiding:

Unsur isi paper baik, sesuai dengan sistematika artikel bidang statistika terapan. Kelengkapan unsur sangat baik.

2. Ruang lingkup dan kedalaman pembahasan:

Ruang artikel cukup baik, dengan materi artikel berhubungan dengan penerapan statistika. Kedalaman pembahasan masih kurang, lebih pada aspek penerapan.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

Kecukupan dan kemutakhiran cukup baik, dengan hasil penelitian berhubungan dengan penerapan statistika

4. Kelengkapan unsur dan kualitas terbitan:

Artikel disampaikan pada *IOP Journal of Physics Conference Series*, terindeks SCOPUS, kualitas terbitan baik.

Semarang, April 2023

Reviewer 1

Prof. Dr. Widowati, S.Si., M.Si

NIP. 196902141994032002

Bidang Ilmu: Matematika

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	Internasional terindek Scimagojr & scopus	Internasioan scopus IEEE	Nasional	
	30	<input type="checkbox"/>	<input type="checkbox"/>	
a. Kelengkapan unsur isi Prosiding (10%)	3			1,5
b. Ruang lingkup dan kedalaman pembahasan (30%)	9			5
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	9			5
d. Kelengkapan unsur dan kualitas terbitan/ Prosiding (30%)	9			5,5
Total = (100%)	30			17
Nilai Pengusul = 40% x 17/3 = 2,27				

Catatan Penilaian artikel oleh Reviewer :

1. Kesesuaian dan kelengkapan unsur isi prosiding:

Unsur isi prosiding lengkap dan sesuai.

2. Ruang lingkup dan kedalaman pembahasan:

Berisi penerapan metode yang sudah ada dalam lingkup matematika keuangan. Model Gamma tidak dibahas secara mendalam.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

Informasi dan metode cukup lengkap, format penulisan artikel perlu mengikuti format yang baku.

4. Kelengkapan unsur dan kualitas terbitan:

Pada saat tulisan diterbitkan JPCS terindeks Scopus. Similarity indeks = 11%

Semarang, April 2023

Reviewer 2



Nama : Prof. Dr. Sunarsih, M.Si

NIP. : 195809011986032002

Unit Kerja : FSM Undip

Bidang Ilmu: Matematika



The 10th International Seminar on New Paradigm and Innovation on Natural Science and Its Application (10th ISNPINSA)

“Developing Innovations and Challenges in Science And Technology For Better Living”

September 24-25, 2020

PREFACE

The International Seminar on New Paradigm and Innovation of Natural Sciences and its Application (ISNPINSA) is an annual conference organized by the Faculty of Sciences and Mathematics (FSM), Diponegoro University (UNDIP), Semarang, Central Java, Indonesia. This seminar has been successfully conducted since 2011 and therefore becoming an annual event since then. This annual ISNPINSA has been intensively achieved high level improvement in strengthening the collaboration between scientists either from Indonesia or other countries, stimulating a new research partnership, and contributing to formulating policies to increase the important roles of science for the community.

The 10th ISNPINSA was held on September 24-25, 2020 with the theme of “DEVELOPING INNOVATIONS AND CHALLENGES IN SCIENCE AND TECHNOLOGY FOR BETTER LIVING”. Due to the outbreak of COVID-19, the conference process was carried out virtually using licensed Zoom media. The presentations were categorized into two terms, which were plenary presentation and parallel presentation. Keynote speakers were invited to deliver their expertise and research findings at the plenary presentation and each had given 1 hour of speech. While invited speakers together with all parallel presenters delivered their presentation in parallel session with time of speech including Q&A for each of 15 minutes.

The number of participants of the seminar were 313 including 7 keynote speakers, 5 invited speakers, presenters and non-presenters coming from various institutions of various countries consist of researchers, lecturers, postgraduate and undergraduate students from various universities. There were 263 papers presented in this seminar and after the review process, there are 199 articles to be published in the present conference proceeding. All published articles remain the sole responsibility of the author for the content of the paper.

We would like to take this opportunity to extend our appreciation to all keynote speakers and invited speakers for their valuable presentation. We also would like to thank all the authors for submitting and presenting their papers to our conference, the Organizing Committee members and the supporting staff for their hard work, as well as all the Scientific & Editorial Committee and the reviewers for their constructive recommendations and critical comments helped to improve of the submitted papers. All these contributions eventually make the 10th ISNPINSA 2020 a successful and fruitful event.

The 10th ISNPINSA 2020 Organizing Committee hopes you will enjoy reading this JPCS volume.

The Chairman,
Nor Basid Adiwibawa Prasetya, S.Si., M.Sc., Ph.D

PREFACE • The 10th ISNPINSA 2020



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Preface

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Peer review declaration

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10th ISNPINSA

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Variance gamma for stock model performance with excess kurtosis
A Hoyyi, Tarno, D A I Maruddani and R Rahmawati

Spintronic terahertz emission from Ni/Pt bilayer grown on MgO

J P Ferrolino¹, N I Cabello², A De Los Reyes², V K Mag-usara³, J P Afalla³, H Bardaloza², I C Verona², M Talara³, H Kitahara³, A Somintac², A Salvador², M Tani³, E Estacio²

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Abstract. Spintronic THz emission from Ni/Pt bilayer grown on MgO is reported based on the novel THz emitter using metallic structures. The Ni metal was deposited first on a MgO substrate and capped with a thin Pt metal via electron beam deposition. The THz emission data was obtained using a standard terahertz time-domain spectroscopy setup using a Ti: sapphire laser excitation source. Initial measurements were done using 800nm excitation with 7 mW and 185 mW pump powers under upward and downward magnetic field orientations. Polarity reversal of the terahertz signal was observed upon changing the orientation of the magnetic field. Maximum amplitude was found at 0.5 THz with bandwidth up to ~6 THz. A saturation fluence of 85.04 mJ/cm² was calculated from the pump fluence-dependence plot of the THz peak-to-peak signal. The results are consistent with the spintronic THz emission due to the inverse spin-Hall effect and provide insights for future development and optimizations.

1. Introduction

Terahertz (THz) radiation, or electromagnetic radiation in general, has been known to be generated when charge carriers accelerate [1]. This has been utilized in THz emission of materials, especially in semiconductors which main mechanisms are by drift-related current and/or diffusion-related current [2,3]. To optimize these mechanisms, different methods have been employed, such as varying dopant concentrations [2], low-temperature growths [4], epitaxial layer designs [5], and quantum structures [6]. Fabrication techniques have also been implemented like the photoconductive antenna (PCA) designs which accelerate excited electrons from one electrode to another in the presence of an electrical bias [7].

Recently, a different THz mechanism was reported by Kampfrath et al., which involves the spin property of the electrons [9]. This opens up spintronics, or spin electronics, in the THz research or possibly vice-versa. The designed emitter source consists of a ferromagnetic, FM, and nonmagnetic, NM, (FM/NM) metal thin film heterostructure. This emitter utilizes the inverse spin-Hall effect (ISHE), a phenomenon that converts the spin current (coming from the FM material) into a transient transverse



PV/T solar collector performance evaluation: generation of fuzzy rules by using weighted subsethood-based algorithm

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Abstract. A photovoltaic/thermal solar collector operates efficiently if the surrounding conditions are in a favorable state; where the factors or parameters such as solar radiation, ambient temperature, photovoltaic collector temperature and air mass flow rates are taken into consideration to ensure the performance of the collector achieves optimum level. Dependency on surrounding conditions limited the width of analysis that could be done on the factors affecting the performance of the solar collector. This study aims to generate fuzzy rules for solar collector performance evaluation. Experiments on the performance of a single passage air photovoltaic/thermal solar collector have been carried out, and a set of membership functions representing all significant factors has been generated. Then fuzzy rules of forecasting were developed using a weighted subsethood-based algorithm to predict the efficiency of the photovoltaic/thermal solar collector. In this fuzzy time series application, the concept of fuzzy rule-based systems was embedded to generate fuzzy if-then rules. The results showed that the PV/T solar collector performance with changes in parameters could be predicted based on the fuzzy rules that have been generated, and thus further could be used to determine the optimum factors conditions required to achieve optimum collector performance without having to carry out experiments.

1. Introduction

In fulfilling the global demand for energy, solar energy is considered one of the high potential renewable energy which has significant importance and uses since it is environmentally friendly, clean, and reliable. As early as the mid 1970s, the interest of researchers in photovoltaic/thermal (PV/T) solar collector study has started [1]. The focus and development of the study have increased since then. There are many parts of the collector study that have been in the researchers' interest, including the design and the theoretical and experimental studies of the solar collector performances.

The operation of PV/T solar collector with air as a working fluid is much depending on the parameters affecting its efficiency. Factors such as solar radiation, PV temperature, air mass flowrate affect the collector's performance in a significant way. Previously, the velocity of air that is forced into the collector is done manually by the researcher [1]. However, it does not necessarily for the fan to be operated at full speed every time to remove the heat. There must be a balance between the input and



Investigation of a method for creating neonatal chest phantom using 3D printer

T Fujibuchi

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Abstract. Newborns and children are more sensitive to radiation and have a longer life expectancy than adults. Therefore, efforts should be made to reduce unnecessary exposure by optimizing the dose when conducting radiological examinations. In order to optimize the dose in neonatal X-ray examinations, we studied a method to create inexpensive and precise neonatal chest heterogeneous anthropomorphic phantoms using a 3 dimensional (3D) printer. Phantoms were created by constructing segments of computed tomography (CT) volume data acquired from the chest of a 6-month-old, excluding the bone and lung tissue, using 3D image analysis software. The material used for 3D printing was polylactic acid; multiple printing densities were investigated. Gypsum and urethane foam were used as bone- and lung-equivalent substances. The CT values of the lung tissue in the phantom were almost the same as those of the air, and those of the bone tissue showed a range of CT values dependent on the print density. By visual evaluation, it was established that the shapes of the original lungs and heart were reproduced in the images of the phantom. The creation of an inexpensive and precise neonatal chest phantom using a 3D printer is useful.

1. Introduction

Radiology is widely used as the basis of medical diagnosis and treatment because of its usefulness. However, strict control is required to minimize ionizing radiation exposure and the related risks. If the radiation dose is too low, disease may be difficult to diagnose and therapeutic effects may be reduced. Moreover, too high a dose may not only impair proper diagnosis and treatment but also causes unnecessary exposure. The International Commission on Radiological Protection (ICRP) recommends the justification and optimization of radiation diagnostics [1]. In addition, the use of diagnostic reference levels (DRLs) as guidelines for patient dose is recommended to promote protection in radiology [2]. A DRL indicates a particular radiation dose in a standard-type radiological examination that serves as a guide for the standardization of imaging conditions at individual facilities. DRLs are set worldwide [3-6].

While efforts are being made to reduce medical radiation exposure in general, this is especially true for newborn and infant exposure. Very young children are more radiosensitive than adults and have a longer life expectancy, which inevitably increases the risk of carcinogenesis. Thus, infant and newborn radiation exposure requires more attention than that of adults. Regarding data on medical exposure, various measured values, estimated values, and indicators have been published in the literature, but there is perhaps insufficient information on general radiography, fluoroscopic examination, and computed tomography (CT) examination of newborns and infants [7-15]. Human body phantoms for newborns and infants are commercially available for radiographic practice. However, dosimeters cannot be

