3.3.2

List of Books/Chapters including Cover Page, Content Page, First Page of the Publications with Weblink (2019)

Greater Noida Institute of Technology (Engg. Institute)

Plot No. 7, Knowledge Park II, Greater Noida
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3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last 5 years [2022, 2021, 2020, 2019, 2018]

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedi	Name of the conference	National / International	Year of publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Dr. Shelly Singla	International Conference on Signal Processing, Computing and Control (ISPCC) 2019	A Study & Review of Various Optical Linearization Techniques for Next Generation RoF Networks	In 2019 5th International	In2019 5th International Conference on	International	2019	978-1-7281-3989-0	Greater Noida Institute of Technology, Greater Noida	Institute of Electrical and Electronics Engineers(IEEE)
2	Dr Moti Singh		Odd – even staggering in rigid tria	64th DAE - BRN	64th DAE - BRNS	NATIONAL	2019	8920121862	Greater Noida Institute of Technology	Department of Atomic Energy, Govt of India
3	Dr Moti Singh		On nuclear shapes of 170Er	64th DAE - BRN	64th DAE - BRNS	NATIONAL	2019	8920121862	Greater Noida Institute of Technology	Department of Atomic Energy, Govt of India
3	Dr Anuranjan Misra		Service level agreements for cloud infrastructures		IEEE:INDIACom-2019-6		2019		Accurate Institute	IEEE
5	Anuranjan Misra		A study of energy optimization for MANET		IEEE:INDIACom-2019-6		2019		Accurate Institute,	IEEE
6	JAY SHANKAR PRASAD		Efficacy of News Sentiment for Stock Market Prediction	2019	, Big Da	International	2019	3-1-7281-021	MVN University	IEEE
7	JAY SHANKAR PRASAD	Advancces in computing and data sciences	An Enhanced Genetic Virtual Machine Load Balancing Algorithm for Data Center	CDS 2	vances	International	2019	3-981-13-993	MVN University	Springer
8	Dr. Arun Kumar Singh		Implementation of integrated secu	Intell	RICE: International c		2019	978-981-15	GLBITM, Greater	Springer, Singapore
9	Mr. Ankit Gupta		An isolated hybrid WT/PV/MH pow	2nd	EEIC 20	International	2019	978-1-7281	School of Enginee	IEEE
10	Dr. Nancy Agarwal		Analyzing Real and Fake users in Face	11th	ISNETS-	International	2019		Bangalore, India	IEEE
11	Dr. Nancy Agarwal	System Reliability, Quality	Content spoofing via compounded SQ	Inter	ICICCT	International	2019		Rajasthan	Springer
12	Dr. Pooja xena		Multiplexer based Voltage Controlled Delay Buffer Element	IEEE 5th Inte	IEEE 5th Internationa	International	2019	978-1-5386-8075-9	Greater Noida Institute of Technology, Greater Noida	Institute of Electrical and Electronics Engineers(IEEE)

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A Study & Review of Various Optical Linearization Techniques for Next Generation RoF Networks

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***Abstract*—Radio-over-Fiber (RoF) links has become a promising technique to deliver effective communication as it offers broad bandwidth and low losses. To enhance the link performance, numerous techniques have been reported. This article reviews techniques used to linearize RoF links i.e. optical and electrical linearization. A comparison table has been drawn considering bandwidth, non-linearity, losses, link complexity & cost. It is found that optical linearization is the most suitable technique for the linearization of link. Hence, this technique is further discussed and its different types have been explored.**

***Index Terms*—Radio-over-Fiber, inter modulation distortion, harmonic distortion, microwave photonic links, spurious free dynamic range, dual wavelength linearization, Mach-Zehnder modulator.**

I. INTRODUCTION

In late 80's, when communication was not that much efficient as it is today, researchers made attempts to make situation anyhow better. There was extremely erroneous communication taking place due to so many reasons and deformities. The reason behind this poor communication was merely low bandwidth, high insertion losses and high electromagnetic interference while deformities include optical fiber's inherent losses. Despite of them, signal non-linearities deteriorated system performance brutally. Many approaches were investigated to mitigate non-linearities and to enhance the system performance. Initially, a dual polarization technique in interferometric optical modulators was experimentally demonstrated which alleged substantial reduction in intermodulation distortion (IMD) by adjusting relative amounts of optical power in TE and TM modes. Reduction in distortion of 21 dB had been recorded [1]. But problem with this arrangement was to attain correct ratio of powers at the two polarizations in absence of polarization beam splitter. At the end of this decade, a method using unique characteristic of two integrated optical modulators connected in parallel to achieve improved linearity and system performance was reported [2]. By correcting dominant quadratic distortion, this technique landed up in small increase in required optical power and moderate increase in the required drive voltage. A link linearization method was purposed in early 90's that incorporated lithium-niobate ($LiNbO_3$) Mach-Zehnder modulator (MZM) to solve for power related complications. With only one RF and one dc bias electrode this modulator modulated two optical carriers and distortion cancellation was achieved by adjusting ratio of those two optical power carriers [3]. An another approach presented a linearised modulator which makes use of two fiber-coupled inferometers modulators with polarization control between them integrated in series on a single chip. By critically adjusting single bias point, this arrangement had provided significant third order IMD free dynamic range improvement [4]. However, link had dominant noise figure penalty.

So far, every new approach had some shortcomings associated with them. Then a new technology came as a potential solution to all problems stated above, i.e. Radio-over- Fiber (RoF). RoF offered large capacity, improved flexibility and large coverage area as well as decreased costs and complexity of system [5]. RoF technology is basically a hybrid of microwave and optical networks which combine the technical advantages of the optical and wireless communication systems [6]. In RoF, RF signal is used to directly modulate light and the modulated signal is transmitted through optical fiber. Though, this modulation can be at an intermediate frequency also. RoF technique has the potentiality; thereby it gained popularity and became backbone of the wireless access network. Such architecture had certain advantages such as high bandwidth, mobility, low losses, immunity to electro-magnetic interference, and reduction in complexity at the antenna site, radio carriers can be allocated dynamically to the different antenna sites, and transparency and scalability [7, 8]. Antenna-remoting, radio astronomy, radar and electronic warfare are the few applications of RoF technology [9].

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Odd – even staggering in rigid triaxial rotor model

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In geometrical approach, the triaxial nuclear properties are usually interpreted in terms of two basic models, the rigid triaxial rotor model (RTRM) [1] and the γ – unstable rotor model [2]. In γ – soft rotor model of Wilets and Jean, it is assumed that the potential energy is independent of γ – degree of freedom to describe the deviations from axial symmetry while the rigid triaxial rotor model considers the rigid shape of nucleus having harmonic oscillator potential with a minimum of finite value of asymmetric parameter γ. Therefore, it has always been a subject of keen interest for experimentalists and theoreticians to see whether the asymmetric nucleus under consideration is axial, γ - soft or γ – rigid.

In RTRM, the ground state band is normal rotational band while the other two bands that are γ and γγ – bands are anomalous rotational bands. We shall evaluate the values of energy levels of observed spectrum within the framework of rigid triaxial rotor model at different asymmetry parameter γ and compared the odd – even staggering (OES) in γ and γγ – band. The staggering indices S (I) in γ – band is expressed as [3]

$$S(I) = \frac{(E_I - E_{I-1}) - (E_{I-1} - E_{I-2})}{E2_1^+} \quad (1)$$

McCutchen et al [4] using above equation shown that for both vibrator and γ – soft limits the S (I) is negative for even spins and positive for odd spins. For rigid triaxial nucleus, the values of S (I) again oscillating but opposite in phase namely, positive for even spins and negative for odd spins. For axially symmetric deformed rotor that is for harmonic oscillator potential with minimum at $\gamma = 0^0$, the S (I) values are small, positive and constant with increasing spin. The OES in γ – band using RTRM have been studied earlier for some even – even nuclei [5 - 7].

We have plotted the staggering indices S (I) calculated in RTRM with spin up to I = 12 for both γ and γγ – band [Fig. 1(a) – (b)]. It is clear that there is a significant difference in the behavior of staggering indices of γ and γγ – band in RTRM. The zigzag behavior that is the alternate positive values at even spin (positive phase) and the negative values at odd spins (negative phase) of staggering indices S (I) in RTRM initiates from spin I = 8 at $\gamma = 25^0$ and continues up to $\gamma = 30^0$ in γγ – band. However, in γ – band this zigzag behavior is seen from spin I = 10 at $\gamma = 10^0$, S (8) at $\gamma = 15^0$ and S (6) at $\gamma = 20^0$ and before these spins the values of all S (I) are small, positive, and constant. Although, the sign of S (I) at all spins are same in both the bands showing alternate positive and negative phase. The magnitude of S (I) in γγ - band differs from γ - band, it is small in γγ – band and is large in γ – band. The magnitude of S (I) in γγ – band is constant and is nearly equal to 0.33for $\gamma = 10^0$ and $\gamma = 15^0$ at all spins. This constant value continues upto spin I = 8 at $\gamma = 20^0$ and at higher spins the magnitude initiates to deviate from this constant value. The value of S (I) increases for even spins and decreases for odd spins from the constant value 0.33. The deviation increases with the increase of spins and asymmetric parameter γ upto spin I = 8, at $\gamma = 25^0$ and then the zigzag behavior appears. However, for γ – band the S (I) values are constant and nearly equal to 0.33 only upto spin I = 8 at $\gamma = 10^0$. The deviation in the value of S (I) increases and zigzag nature of S (I) appears beyond I = 10 at $\gamma = 10^0$. Therefore, it is not justified to take zigzag behavior similar to γ – band as criteria to distinguish γ – rigid and γ – soft nucleus in γγ – band. Hence, the criteria to distinguish γ – rigid and γ – soft nucleus in γγ – band should be the similarity of experimental S (I) with RTRM, not the zigzag behavior.

Thus, in the present work we have compared the experimental energy staggering indices of γγ – band with RTRM for ^{154}Gd and ^{178}Hf. The values of S (I) in experiment are very small and positive at all spin that is from S (6) to S (13) in γγ – band for ^{154}Gd. These values are similar in phase with RTRM [Fig.2 (a)]. Thus, it may be rigid triaxial nucleus.

On nuclear shapes of ^{170}Er

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Introduction

In recent past extremely rich experimental data has come in light in low – lying nuclear spectroscopy. The basic property of nucleus is its geometric shape and it is quantified in terms of geometric deformation parameters β and γ. The possibility of static triaxial shape is a long-standing problem in nuclear structure physics. The γ – unstable and γ – rigid models predict the similar values of energy levels in ground state band but a significant difference is found in the γ – band. The γ – unstable model group the γ – band energy levels as $2+, (3+, 4+), (5+, 6+), \ldots$ while γ – rigid model group these energy levels as $(2_2^+, 3_{1)}^+), (4_2^+, 5_1^+), 5_1^+ \ldots$ respectively. The relative displacement of odd spin levels with respect to even spin levels that is odd – even staggering (OES) be taken as a signature of nucleus being γ – soft, γ – rigid or axial.

The staggering indices S (I) for experimental as well as theoretical energy levels of γ – band is expressed as –

$$S(I) = \frac{(E_I + E_{I-2}) - (2E_{I-1})}{E2_1^+}$$

For axially symmetric rotor, S(I) does not show any variation in phase and remain small in magnitude. The pattern of S(I) versus spin (I) in experiment if found similar in phase with that of γ – rigid model [1] then nucleus is said to be rigid in nature while if the experimental energy staggering pattern is similar to that of γ – soft model [2]in phase, the nucleus is said to be γ – soft.

We undertake the study of ^{170}Er nucleus in the present work. The γ – band energies for this nucleus have appeared in literature showing many high spin states.

Table – 1

Experimental staggering indices S (I) alongwith ARM for $\gamma = 11.5^0$ and $\gamma = 13^0$ calculated from $E2_2^+/E2_1^+$ [1] and $B(E2; 2_1^+ \rightarrow 0_1^+)$ [3] values for ^{170}Er nucleus

S (I)	Exp. Value	ARM [1] γ=11.5^0	ARM [3] γ=13^0
S (4)	0.510	0.041	0.036
S (5)	-0.090	0.017	0.026
S (6)	0.700	0.039	0.0001
S (7)	-0.130	0.008	-0.006
S (8)	0.780	0.009	0.150
S (9)	-0.320	-0.030	-0.850
S (10)	0.860	0.120	0.225
S (11)	-0.470	-0.100	-0.230
S (12)	1.860	0.217	0.550
S (13)	-1.360	-0.224	-0.334
S (14)	1.280	0.360	0.670
S (15)	-1.080	-0.400	-0.75
S (16)	1.800	0.570	1.005
S (17)	-1.700	-0.630	-1.130
S (18)	2.270	0.820	1.400
S(19)	-1.84	-0.910	-1.570

Analyzing Real and Fake users in Facebook Network based on Emotions

Publisher: IEEE Cite This PDF

Mudasir Ahmad wani ; Nancy Agarwal ; Suraiya Jabin ; Syed Zeeshan Hussain **All Authors**

Abstract:
Fake profile detection is one of the critical problems in Online Social Networks (OSNs). So far, studies have mainly focused on profile-based, behavioral-based, network-based and content-based attributes. However, user sentiments have not been explored along this domain. In the present study, we proposed the fake profile detection model that incorporates sentiment-based attributes to differentiate real and fake OSN profiles. The study is grounded in the fact that the posts of real users reveal varied categories of emotions such asjoy, sad, angry, fear, etc. based on their life experiences. On the contrary, fake users share posts to accomplish a specific purpose, and therefore, it is highly likely that their post content will contain similar types of emotions. The experiments are conducted on the posts of Facebook users. The detection model is trained on 12 emotion-based attributes including Plutchik's eight basic emotions, positivity and negativity. Furthermore, a noise removal technique is presented to remove the outliers from the dataset. Finally, several machine learning techniques including Support Vector Machine (SVM), Naive Bayes, JRip and Random Forest have been used to train the detection model.

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Content Spoofing via Compounded SQL Injection

Syed Zeeshan Hussain & Nancy Agarwal

Conference paper | First Online: 28 June 2019
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Abstract

With the advent of high dependency on the usage of web applications in a day to day life, the issue of web attacks has become a serious concern in information security. Attackers are continuously discovering innovative strategies to exploit the vulnerabilities existing in an application. Compounded SQLi is one of the attacking techniques which consists of combining the SQL injection with other forms of attacks to perform more advanced attacks. In the paper, we present a new form of compounded SQL injection attack technique which uses the SQLi attack vectors to perform content spoofing attacks on a web application. Content spoofing and SQL injection (SQLi) are the two different kinds of injection vulnerabilities of a website. Former is the client-side attack while the latter is the part of server-side attacks. Content spoofing attacks target the website with the aim to deceive its users by presenting the malicious content on the webpage which they believed to be the legitimate content. On the other hand, SQLi-based attacks target the application to exfiltrate the database records and perform unauthorized operations at the server. The paper demonstrates the step by step procedure to conduct content spoofing via SQLi attack vectors. Furthermore, the paper explains how the attacker can use the proposed compounded SQLi attack to harm the websites which were earlier resistant to traditional content spoofing attacks.

Keywords
Web security Web vulnerabilities Cyber attacks Content spoofing SQL injection

Sections Figures References

Multiplexer based Voltage Controlled Delay Buffer Element

Publisher: IEEE Cite This PDF

Pooja Saxena ; Mohd Amir Khan **All Authors**

Abstract: This paper presents a voltage controlled delay buffer using a 2:1 multiplexer, designed in 0.35 µm CMOS process. The multiplexer is realized with transmission gate, which... **View more**

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Abstract:

This paper presents a voltage controlled delay buffer using a 2:1 multiplexer, designed in 0.35 µm CMOS process. The multiplexer is realized with transmission gate, which results in achievement of high speed, low power and full swing output characteristics of delay buffer. The least attained post layout rising edge delay is 120 ps that is comparable with standard cell inverter. The delay regulation range achieved over control voltage of 0 V to 3.3 V is from 120ps to 560ps. The performance of delay buffer for single edge delay control across PVT variations is successfully verified by design of modified delay lock loop.

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