



چگونه یک مقاله علمی با کیفیت بنویسیم؟


حسن بیورانی

مرکز پژوهشی ریزشیکه و شبکه‌های هوشمند الکتریکی
دانشگاه کردستان
۲۲ خرداد ۱۴۰۲

Smart/Micro Grids Research Center, University of Kurdistan

Content

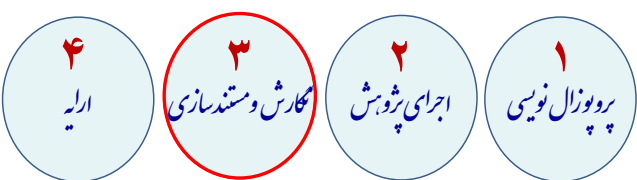
1. Introduction
2. Paper structure
3. Key issues
4. Submission, and review process
5. Examples
6. Ethics principles



H. Bevrani University of Kurdistan 2/100

Introduction


پژوهش



H. Bevrani University of Kurdistan 3/100

Why Writing a Paper?

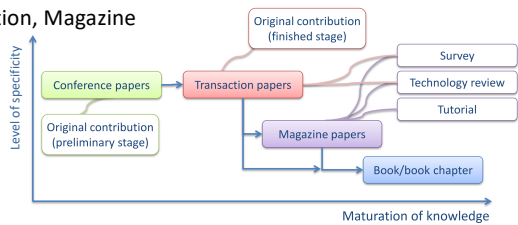
- Get an education degree
- Get a scholarship, a fund, a prize
- Get promotion
- Improve your CV
- Become known as an expert in an area
- Share discoveries
- Document/protect the research achievements
- Supporting the Development of a team, university, country ...



H. Bevrani University of Kurdistan 4/100

Publication Types

- 1- Academic report, Thesis
- 2- Conference
- 3- Journal/Transaction, Magazine
- 4- Book chapter
- 5- Book



H. Bevrani University of Kurdistan 5/100

A Fact!

- A **poor** research leads to a **poor** paper
- A **good** research **may** lead to a **good** paper (or **may not!**)

↓

✓ **Some skills are needed:**
Correct Reading, Well Writing, Language, Journal Selection, ...

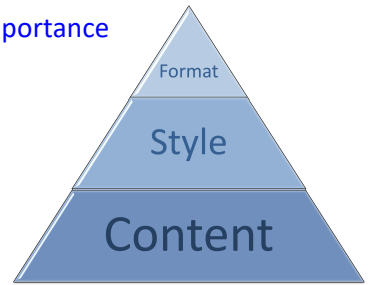
H. Bevrani University of Kurdistan 6/100

What is a Good Paper?

- It is **easy to read** and **understand**
- It describes a problem with a **clear contribution**
- It is **timely**
- It is **well-presented** and **properly formatted**
- It is **Verifiable**

Academic Paper: Elements

Elements according to **importance** and work **effort/amount**:



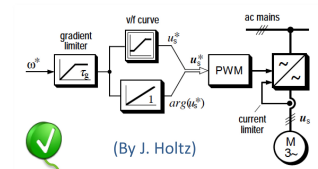
Academic Paper: Format

Careful formatting and good presentation shows respect and appreciation to the reviewer/reader

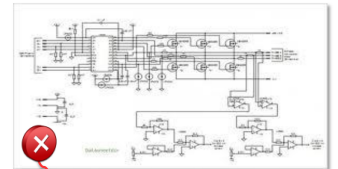
- Follow the journal **format**
- Use **standard** nomenclature, acronyms, and jargon
- Check **spelling** and **grammar**

Academic Paper: Format

- Diagrams, **figures** and tables:



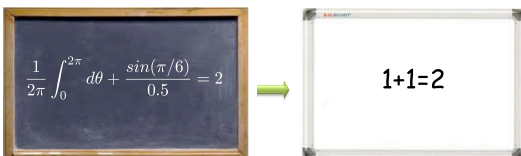
Simple, concise: beautiful!



Bad presentation originates rejection!

Academic Paper: Style

Most students believe making something complicated more scientific value.

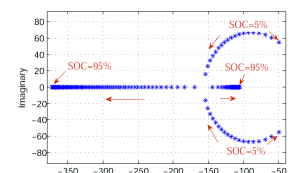
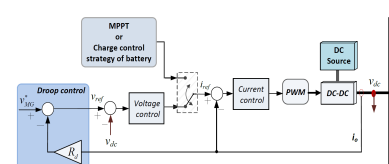


“Make everything as simple as possible, but not simpler.”
— Albert Einstein

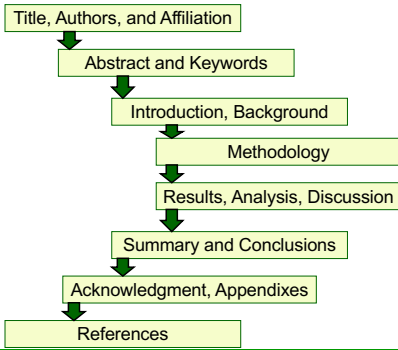


Academic Paper: Style

- Keep the **complexity** to the **minimum** necessary
- **Order ideas** in a logic way (tell the “story”)
- Support the “**story**” with clear diagrams, tables and figures
- Be **clear** and **concise**




Academic Paper: Structure




Title, Authors, and Affiliation

Electrical Power and Energy Systems 54 (2014) 244–254

Contents lists available at ScienceDirect

 Electrical Power and Energy Systems

journal homepage: www.elsevier.com/locate/ijepes



Virtual synchronous generators: A survey and new perspectives

Hassan Bevrani^{a,b,c}, Toshifumi Ise^b, Yushi Miura^b

^a Dept. of Electrical and Computer Eng., University of Kurdistan, PO Box 416, Sanandaj, Iran
^b Dept. of Electrical, Electronic and Information Eng., Osaka University, Osaka, Japan

Title

o The Title may include:

Keywords, application, and descriptive terms

o The Title should be:

- Clear and attractive
- Short but informative (around 10 words)
- Avoid **wasted/redundant** words
- Be careful with using: “A novel...”, “Next generation...”, “The best...”, etc.

Example 1

“Molecular mechanical models for organic and biological systems going beyond the atom centered two body additive approximation: aqueous solution free energies of methanol and N-methyl acetamide, nucleic acid base, and amide hydrogen bonding and chloroform/water partition coefficients of the nucleic acid bases”



Example 2

Exploring Julia's Potential for Grid-Forming Converters^s Simulation and Control^{Using} in a High-Level Language:



Grid-Forming Converters Simulation and Control Using a High-Level Language: Exploring Julia's Potentials

Example 3

Review on Wide-Area Damping Control for Power Systems with Renewable Energy



Wide-Area Damping Control in Renewable Integrated Power Systems: Achievements and New Challenges

Example 4

Enhancing Robustness in Grid-Forming Converter Controllers: A Kharitonov Theorem-based Framework with Improved D-Stability Considerations

Robust Tuning of
Enhancing Robustness in Grid-Forming Converter Controllers: A Kharitonov Theorem-based Framework with Improved D-Stability Considerations

Robust Tuning of Grid-Forming Converter Control System Using Kharitonov Theorem And D-Stability Concept

Keywords

- Most significant
- Most relevant
- Few (5 to 7)
- Alphabetical order



Abstract

- Short in one paragraph (150~300 words)
- Summary of the subject and outcome
- Problem, objective, methodology
- No abbreviations, references, equations
- Correct (no error!)



Example 1

Abstract— This proposal presents a robust tuning approach for the controller of a grid-forming converter (GFM) by employing the Kharitonov's theory and the generalized D-stability technique. The Generalized D-stability method is utilized to determine the optimal values of each coefficient in the conventional control system while maintaining the integrity of the existing controller. As a result, the complexity of the control system remains unchanged from a technical standpoint, and there are no additional costs incurred from the economic perspective. Experimental evaluations are conducted to assess the effectiveness of the proposed approach. The results demonstrate significant improvements in the performance and robustness of the GFM controller.

Index Terms—Robust control, grid forming converters, kharitonov theory, industrial applications.

Continue

the kharitonov's theorem is used to find the family of all stabilizing sets of GFM control system parameters. Then, the improved D-stability method is utilized to determine the optimal values of each coefficient in the conventional control system while maintaining the integrity of the existing controller. As a result, the complexity of the control system remains unchanged from a technical standpoint, and there are no additional costs incurred from the economic perspective. Experimental evaluations are conducted to assess the effectiveness of the proposed approach. The results demonstrate significant improvements in the performance and robustness of the GFM controller.

Abstract— This proposal presents a robust tuning approach for the controller of a grid-forming converter (GFM) by employing the Kharitonov's theory and the generalized D-stability technique. The Generalized D-stability method is utilized to determine the optimal values of each coefficient in the conventional control system while maintaining the integrity of the existing controller. As a result, the complexity of the control system remains unchanged from a technical standpoint, and there are no additional costs incurred from the economic perspective. Experimental evaluations are conducted to assess the effectiveness of the proposed approach. The results demonstrate significant improvements in the performance and robustness of the GFM controller.



Abstract— This proposal presents a robust tuning approach for the control system of a grid-forming (GFM) converter by employing the Kharitonov's theorem and an improved D-stability technique. The Kharitonov's theorem is used to find the family of all stabilizing sets of GFM control system parameters in the presence of system perturbations. Then, the improved D-stability method is utilized to determine the optimal parameters values set without changing the framework of the existing control system. As a result, the structure simplicity of the control system remains unchanged, and there are no additional costs incurred from the economic perspective. An experimental evaluation with various test scenarios is conducted to assess the effectiveness of the proposed approach. The results demonstrate significant improvements in the robustness of the GFM converter control stability and performance.

Index Terms—Robust control, grid forming converters, kharitonov theory, industrial applications, D-stability.

Example 2

ABSTRACT

Low-frequency oscillations (LFOs) pose a significant challenge to the dynamic performance of power systems with high-ratio renewable energy. The problem of inter-area LFOs has become a critical issue in interconnected power systems. In recent years, wide-area damping control (WADC) has been widely studied in suppressing inter-area LFOs in power systems with renewable energy. This paper aims to provide a broad overview of critical technologies related to WADC based on wide-area measurement system (WAMS). First, the general framework of WADC of the power system with renewable energy is introduced. Second, the key issues of wide-area damping controllers are discussed in detail. Subsequently, the different design methods of wide-area damping controllers are summarized and compared: offline and adaptive. Finally, the challenges and prospects of WADC are highlighted. It is anticipated that this paper will provide a timely and useful overview to the researchers of WADC in power systems with renewable energy.

Continue

ABSTRACT

Low-frequency oscillations (LFOs) pose a significant challenge to the dynamic performance of power systems with high-ratio renewable energy. The problem of inter-area LFOs has become a critical issue in interconnected power systems. In recent years, wide-area damping control (WADC) has been widely studied in suppressing inter-area LFOs in power systems with renewable energy. This paper aims to provide a broad overview of critical technologies related to WADC based on wide-area measurement system (WAMS). First, the general framework of WADC of the power system with renewable energy is introduced. Second, the key issues of wide-area damping controllers are discussed in detail. Subsequently, the different design methods of wide-area damping controllers are summarized and compared: offline and adaptive. Finally, the challenges and prospects of WADC are highlighted. It is anticipated that this paper will provide a timely and useful overview to the researchers of WADC in power systems with renewable energy.

high penetration of

removal, integration, power system, offline and online adaptive, researchers on research works

Example 3

Abstract In order to enhance frequency and active power control performance, this research proposes a decentralized approach to frequency regulation for microgrids. The suggested approach employs the Kharitonov method to design of a robust proportional-integral (PI) controller. The PI controller is made expressly to deal with the uncertainties and disruptions that are frequently present in power grid operations. The PI controller successfully mitigates system risks by demonstrating strong stability through the application of the Kharitonov approach. Additionally, depending on the expected system performance, this work uses Bayesian optimization to choose the best parameters from the Kharitonov solution family. In decentralized frequency regulation, the Kharitonov approach combined with Bayesian optimization presents a viable framework for robust-optimal parameter selection. The efficacy of the suggested method in attaining stable frequency regulation in microgrids is demonstrated.

Keywords: Kharitonov theory, optimal control, frequency control, robust control, Bayesian optimization.

Continue

کنترل جریان یک اینورتر واسط بین منبع ولتاژ و شبکه برق توسط رگولاتور خطی در دو حالت بهینه و زیر بهینه

چکیده: در طول نیم قرن گذشته تئوری کنترل مدرن تا حد زیادی توسعه یافته و شاخه‌هایی نیز از آن به وجود آمده‌اند، برای مثال به تئوری سیستم خطی، کنترل بهینه، شناسایی سیستم، کنترل مد لغزشی، کنترل آماري و... اشاره کرد. در همین حال تئوری کنترل بهینه امروزه نقش مهمی در طراحی سیستم‌های مدرن ایفا می‌کند. اهداف تئوری کنترل بهینه را می‌توان به حداکثر کردن کارایی سیستم و حداقل کردن هزینه خلاصه نمود. در این گزارش سیستم یک اینورتر واسط بین منبع ولتاژ و شبکه برق توسط رگولاتور خطی در دو حالت بهینه و زیر بهینه کنترل شده و مقایسه‌ای بین این دو رویکرد انجام می‌گیرد.

کلمات کلیدی: کنترل بهینه، رگولاتور خطی بهینه، رگولاتور خطی زیر بهینه

in the power system, support using grid-forming (GFM) converters

Abstract In order to enhance frequency and active power control performance, this research proposes a decentralized approach for power grid frequency regulation. The suggested approach employs the Kharitonov method to design of a robust proportional-integral (PI) controller. The PI controller is made expressly to deal with the uncertainties and disruptions that are frequently present in power grid operations. The PI controller successfully mitigates system risks by demonstrating strong stability through the application of the Kharitonov approach. Additionally, depending on the expected system performance, this work uses Bayesian optimization to choose the best parameters from the Kharitonov solution family. In decentralized frequency regulation, the Kharitonov approach combined with Bayesian optimization presents a viable framework for robust-optimal parameter selection. The efficacy of the suggested method in attaining stable frequency regulation in microgrids is demonstrated.

Keywords: Kharitonov theory, optimal control, frequency control, robust control, Bayesian optimization.

Continue

Correct Writing!

کنترل جریان یک اینورتر واسط بین منبع ولتاژ و شبکه برق توسط رگولاتور خطی در دو حالت بهینه و زیر بهینه



نشانه‌های نگارشی

فرهنگی، اقتصادی ← فرهنگی، اقتصادی

نیم فاصله

- نیم فاصله کاذب: shift+ space
نیم فاصله استاندارد: ctrl+ shift+ 2
نیم فاصله در سیستم عامل مک: shift+ space

می توانم ← می توانم

use your official email: luk@ucir.ac.ir

ThirdAuthor@Email

چکیده - در طول نیم قرن گذشته تئوری کنترل مدرن تا حد زیادی توسعه یافته و شاخه‌هایی نیز از آن به وجود آمده‌اند، برای مثال به تئوری سیستم خطی، کنترل بهینه، شناسایی سیستم، کنترل مد لغزشی، کنترل آماري و... اشاره کرد. در همین حال تئوری کنترل بهینه امروزه نقش مهمی در طراحی سیستم‌های مدرن ایفا می‌کند. اهداف تئوری کنترل بهینه را می‌توان به حداکثر کردن کارایی سیستم و حداقل کردن هزینه خلاصه نمود. در این گزارش سیستم یک اینورتر واسط بین منبع ولتاژ و شبکه برق توسط رگولاتور خطی در دو حالت بهینه و زیر بهینه کنترل شده و مقایسه‌ای بین این دو رویکرد انجام می‌گیرد.

Example

○ جمله بندی

ما در این پژوهش یک کنترلر تطبیقی طراحی می نماییم.
↓
در این پژوهش، یک کنترلرکننده تطبیقی طراحی می شود.

ربات متحرک به یک واحد کنترل نیاز دارد تا تمام زیرسیستم های تشکیل دهنده ربات را هماهنگ کند. در واقع سیستم کنترل، وظیفه هماهنگ کردن تمام داده های ورودی و برنامه ریزی حرکت ربات را برعهده دارد.

↓
واحد کنترلی که در این پژوهش مورد نظر است، تمام زیرسیستم های تشکیل دهنده ربات را در جهت پردازش داده های ورودی و برنامه ریزی حرکت ربات هماهنگ می کند.

Correct Writing!

○ کمک به درست نوشتن

1. خواندن کتاب های مورد علاقه
2. ابزارهای کمکی



<https://virastyar.ir>



<https://emla.virastaran.net>

Correct Writing!

○ کمک به درست نوشتن: ابزارهای کمکی



Introduction

What is the problem?

What we know?

What we do not know?

What we did in this study?

What was the result?

How it is verified?

Introduction

- Problem statement
- Review of related literature
- Definition of some terms
- Limitations
- Clarifying the **contribution**
- Paper organization



What is a Contribution/Novelty?

- ✓ Do a **new/original** research
- ✓ **Realize/Confirm** an idea/algorithm/theorem
- ✓ **New application** for a theorem
- ✓ **Find a different solution** for a problem
- ✓ **Develop** a new algorithm/methodology
- ✓ **Design** a new product, **Improve** an existing product
- ✓ Study **new aspects** of a problem/phenomena

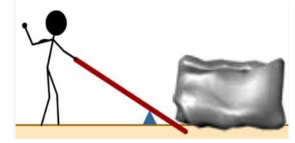


Abstract and Introduction are Important!



Content and Methodology

- The addition to the knowledge is called a **“contribution”**
- A **contribution** should be
 - New
 - Significant
 - Useful
 - Verifiable/refutable
- The **methodology** should explain how the contribution is made.



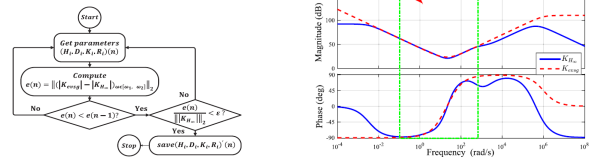
Content and Methodology

- The **framework** of the proposed method/technique
- **Procedures** for collection and treatment of data
- Hardware or software **development**
- Present and discuss **simulation results**
- Give **all conclusions**: positive and negative
- Identify **future work** and open problems



Content and Methodology

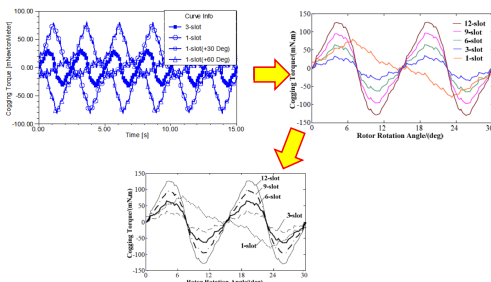
The main body must be supported with diagrams, figures, tables, flowcharts, etc.



Parameter	Value	Parameter	Value
D (pu/Hz)	0.015	T_r (s)	0.08
$2H$ (pu s)	0.1667	T_i (s)	0.4
T_{FESS} (s)	0.1	T_{FC} (s)	0.004
T_{ESS} (s)	0.1	T_{FC} (s)	0.04
T_{FC} (s)	0.26	R (Hz/pu)	3

Content and Methodology

- Figures must be presented with great care, with all the details clearly visible



Content and Methodology

Results, Analysis, and Discussion

- Presentation of Results/Data
- Analysis of Results/Data
- Comparison and Discussion

Conclusion

- Conclusion is **not a copy** of your abstract!
- Contribution and recommendations (the method, achievement, characteristics)
- Should **not** include:
 - Any new information,
 - Any repeated, word-by-word, sentences
 - A list of what has been presented in the paper.



Acknowledgment and Appendixes

- If any

References

- Follow the Journal/conference format
- Be generous and respectful in referencing (15-30 citations)
- Cite milestone and recent papers
- Cite papers from the same field – journal
- Try to avoid **unnecessary** self-citations

References

- Be exact

Example:

- ✓ F. Blaabjerg, Z. Chen, S.B. Kjaer, "Power Electronics as Efficient Interface in Dispersed Power Generation Systems", *IEEE Trans. Power Electron.*, vol. 19, no. 4, pp. 1184-1194, Dec. 2004.
- ✗ F. Blaabjerg, S.B. Kjaer, "Power Electronics as Efficient Interface in Dispersed Power Generation Systems", *IEEE*, 2004

Important Points

- Value and quality
- Time and concentration
- Integration and relevant
- Careful planning and a creative mind
- Organization of the paper
- Writing style, and language



Important Points

- **Remember**, you are no longer writing for one, two, or three people, but for hundreds, possibly even thousands...



- **Looking from a distance**, as the reviewer will see it, and show your work to others



Useful Tips

- ✓ Do not try to **prove** you are smart
- ✓ Highlight the solution **merits**, and **limitations** of previous works
- ✓ List down the **strengths/weaknesses**
- ✓ Use valid and powerful **tools** for data collection/simulation



Useful Tips

Avoid using:

- ✓ /
- ✓ very long sentences (difficult to read)
- ✓ strong statements (challenges and questions)
- ✓ *don't, isn't, haven't, ...*
- ✓ & instead of *and*



Useful Tips

- ✓ Limits self citation
- ✓ Use suitable/academic words
- ✓ Use sophisticated transition words
- ✓ Do not use *best, ultimate...*



Example

- For SR motors, and PM motors without starting cages, **when the stator current changes, there is no induced rotor current.**
- ✓ For SR motors, and PM motors without starting cages, **changing stator current induces no rotor current.**
- This is a simple method but **seems not to be properly discussed so far.**
- ✓ This is a simple method but **so far is not fully discussed.**
- The **obtained** results **confirm that the SDRE controller is so effective.**
- ✓ The results **verify the effectiveness of the proposed SDRE controller.**

Before Submission

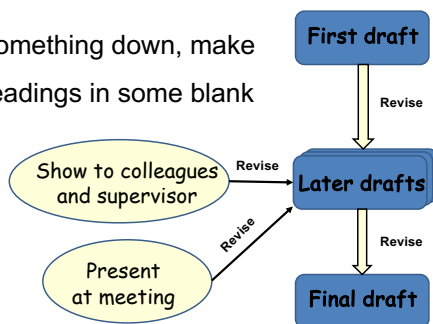
Mark Twain (1835-1910)

Three rules for writing well:

“The first is to review, the second is to review and the third is to review”

Main Steps

First step is to get something down, make headings and subheadings in some blank pages.



Editor

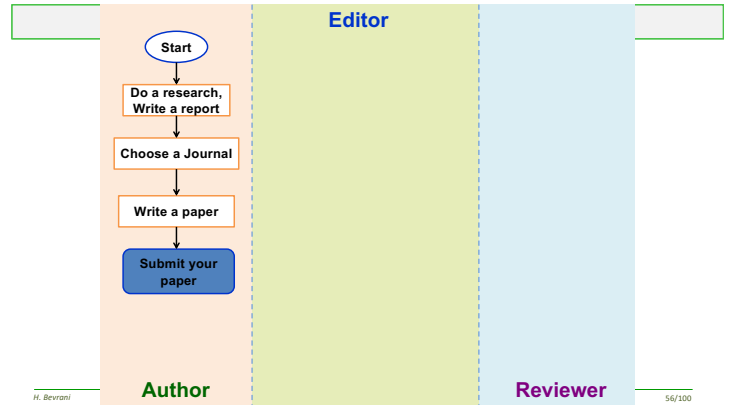


Author

Reviewer

Journal Selection

- Search your Reference list
- See all candidate journals, and check:
 - Aims and scope
 - Types of articles
 - Leadership and Readership.
 - Current hot topics
 - Impact factor.
 - Restrictions
- Ask your supervisor or colleagues
- Consider the publication periods
- See the average time of the review process
- See blacklists!



ScholarOne Manuscripts Dashboard

Author Dashboard

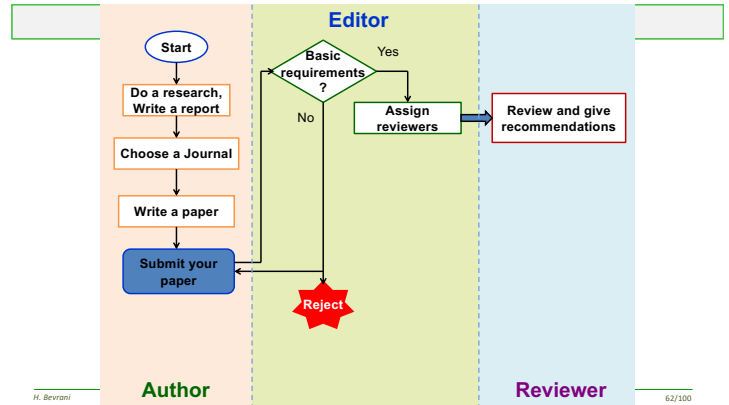
ACTION	STATUS	ID	TITLE	SUBMITTED	DECISIONED
	Contact Journal	MPCE-2023-0325-R2	An Adaptive Data-Driven Fuzzy Approach to Determine Power System Voltage Status	14-Sep-2023	20-Sep-2023
Accept (20-Sep-2023)					
First Look					
Awaiting Production Checklist					

Author Dashboard

Author Dashboard

Paper Type

- Full, Original, Research paper
- Letter, Rapid, Short communication
- Review, Survey paper

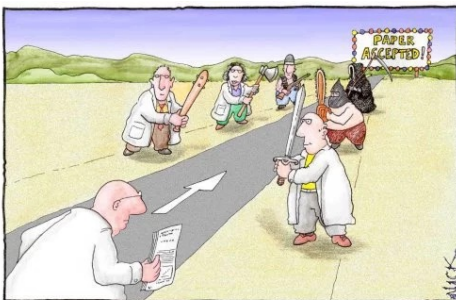


AE Dashboard

Reviewer Dashboard

ACTION	COMPLETED	ID/TITLE	STATUS
Select...	22-Nov-2023	MPCE-2023-0568 Distributed Frequency Control for Transient Stability in Heterogeneous Power System	Reject (28-Nov-2023) Archiving halted: MPCE-2023-0568 failed archive export Assignments: ADM. Jlang, Hai

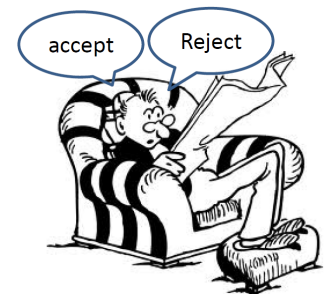
Review Process!



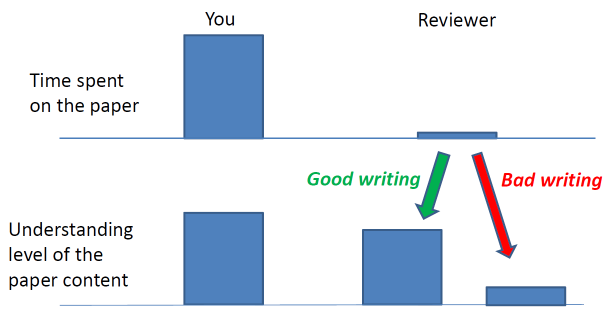
Reviewer !

What are Reviewers looking for?

- Contribution
- Correctness
- Significance

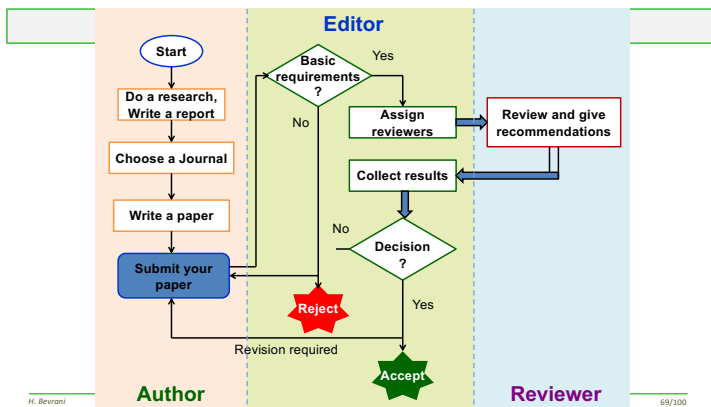


Reviewer !

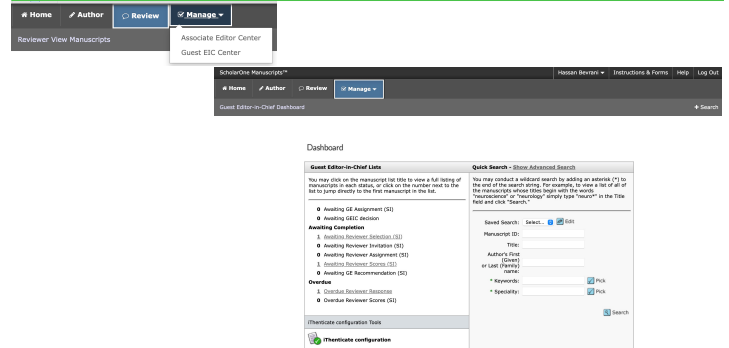


Reviewer Recommendation

- Accept it as it is (Excellent)
- Minor revision and resubmit (Very good)
- Major revision and resubmit (Good)
- Reject (Finished)



EIC Dashboard



Before Resubmission

- Do not hurry!
- Do not get defensive unless it is called for
- Address the comments, point by point



Reviewer 1
Q1 : <the original question>
Our answers: <.....>



Before Resubmission

- **Highlight** the changes/modifications
- Do not **add new** science unless it is called for
- Put it for **a while** and check it again!
- A Reviewer may **misunderstand!**

Before Resubmission

What if a reviewer asks you to do extra work, but you think it is not necessary?

1. Refer to the published work on a similar topic and in the same journal.
2. Argue, e.g. "The focus of this paper is on"

Never challenge the reviewers! Then the reviewers will challenge you back, very likely in a harder way.

Example

Zero-Level Control Design in AC Microgrids: A Robust Multivariable Approach

Submission Receipt Email

IEEE Transactions on Power Electronics - Manuscript ID **TPEL-Reg-2023-01-0057**

IEEE Transactions on Power Electronics <onbehalf@manuscriptcentral.com> Fri, Jan 6, 2023, 11:22 PM

06-Jan-2023

Dear I

Your manuscript entitled "Zero-Level Control Design in AC Microgrids: A Robust Multivariable Approach" has been successfully submitted online and is presently being given full consideration for publication in the IEEE Transactions on Power Electronics.

Your manuscript ID is **TPEL-Reg-2023-01-0057**.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to Manuscript Central at <https://mc.manuscriptcentral.com/tpel-ieee> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Center after logging in to <https://mc.manuscriptcentral.com/tpel-ieee>.

Thank you for submitting your manuscript to the IEEE Transactions on Power Electronics.

Sincerely,
IEEE Transactions on Power Electronics Editorial Office

H. Bevrani University of Kurdistan 75/100

Decision Email

IEEE Transactions on Power Electronics - Decision on Manuscript ID **TPEL-Reg-2023-01-0057**

IEEE Transactions on Power Electronics <onbehalf@manuscriptcentral.com> Sat, Feb 11, 2023, 5:47 PM

11-Feb-2023

Dear

Manuscript ID **TPEL-Reg-2023-01-0057** entitled "Zero-Level Control Design in AC Microgrids: A Robust Multivariable Approach" which you submitted to the IEEE Transactions on Power Electronics, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) have recommended a major revision. This is not a conditional acceptance, but it is an opportunity for you to respond to the editors and reviewers major concerns and to incorporate improvements in the paper according to their suggestions. It is also an opportunity for you to add new results. We normally only permit one major revision before an accept or reject decision is made. So please take the concerns of the reviewers seriously. Therefore, I invite you to respond to the reviewer(s) comments and revise your manuscript within six weeks from the date of this email.

To revise your manuscript, log into <https://mc.manuscriptcentral.com/tpel-ieee> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision.

H. Bevrani University of Kurdistan 76/100

Received Comments

Editor's Comments:

Comments to the Author:

The reviewers found the paper interesting, however they have also raised some major concerns that need to be addressed before possible publication. In particular, the contribution relative to the existing relevant work is not well explained. Next, several aspects of the proposed consensus algorithm need to be better explained. Last but not least, the impact of communication delay and interference on the performance of the algorithm need to be properly taken into account. Please refer to the reviewers' comments for further details.

Reviewers' Comments:

Reviewer: 1

Comments to the Author

This paper presents a fully distributed control framework for secondary control of AC microgrids to manage voltage, frequency, and load sharing in the steady state. Unlike most existing methods, this controller does not utilize any explicit frequency measurement and can release to droop mechanism if the overall communication system fails. In general, the topic of this paper is very interesting and this paper is generally well organized.

However, some more details should be further clarified and considered:

- 1) The proposed method depends on undirected communication network. In communication network, there are inevitable factors leading to directed communication due to the packet loss and communication interference. Hence, it is necessary and meaningful to consider the directed communication. Can the results be extended to directed communication. Meanwhile, the authors may comment on the impact of communication network related issues such as time delay, package loss on the system performance.
- 2) How to choose an appropriate coupling gain in equation (3)? Obviously, this gain affects the overall system stability. For central controllers, such a gain can be easily obtained using small-signal analysis which requires the global information of microgrids. However, small-signal analysis can not be utilized for distributed controllers since the global information is unavailable for distributed controllers.
- 3) Practically, the DG rating is defined by a maximum apparent power rating S_{max} which is related to the system heating or current rating limits. Hence, the active and reactive power of inverters are highly coupled. For example, when active power $P=S_{max}$, the inverter can not output reactive power since $Q=0$. Therefore, how to achieve both active power and reactive load sharing using only inverters?
- 4) The proposed controller consists of different layers such as cyber communication layer and electrical layer. The authors should add more implementation details. Meanwhile, how different layers coordinate with each other?

H. Bevrani University of Kurdistan 77/100

Response Letter and Received Version

March 11, 2023

Prof. Yuan-Ming Chen
Editor-in-Chief
IEEE Transactions on Power Electronics

Dear Prof. Yuan-Ming Chen,

I would like to thank you, the Associate Editor, and the Reviewers for the comments and suggestions concerning the paper entitled "Zero-Level Control Design in AC Microgrids: A Robust Multivariable Approach", which was submitted to the IEEE Transactions on Power Electronics for possible publication. As you can verify from the enclosed revision, we have **revised and improved the manuscript** in response to all the reviewers' comments and suggestions to improve all aspects of the paper. Below, we have also provided a "response to reviewers letter" to address the reviewer's concerns.

Please find attached a pdf file of the revised version of the manuscript. It should be noted that I have highlighted in blue color the main texts and comments that we have revised and included in this version of the paper to facilitate the Editor and the reviewers to identify and locate these changes. We sincerely trust that the revised manuscript is sufficiently improved to warrant publication in the IEEE Transactions on Power Electronics. Once again, we thank you for your time and consideration.

Yuan M. Chen

Zero-Level Control Design in AC Microgrids: A Robust Multivariable Approach

Abstract—In this paper, a distributed multi-agent control approach is proposed for secondary control of AC microgrids to manage voltage, frequency, and load sharing in the steady state. Unlike most existing methods, this controller does not utilize any explicit frequency measurement and can release to droop mechanism if the overall communication system fails. In general, the topic of this paper is very interesting and this paper is generally well organized. However, some more details should be further clarified and considered:

1) The proposed method depends on undirected communication network. In communication network, there are inevitable factors leading to directed communication due to the packet loss and communication interference. Hence, it is necessary and meaningful to consider the directed communication. Can the results be extended to directed communication. Meanwhile, the authors may comment on the impact of communication network related issues such as time delay, package loss on the system performance.

2) How to choose an appropriate coupling gain in equation (3)? Obviously, this gain affects the overall system stability. For central controllers, such a gain can be easily obtained using small-signal analysis which requires the global information of microgrids. However, small-signal analysis can not be utilized for distributed controllers since the global information is unavailable for distributed controllers.

3) Practically, the DG rating is defined by a maximum apparent power rating S_{max} which is related to the system heating or current rating limits. Hence, the active and reactive power of inverters are highly coupled. For example, when active power $P=S_{max}$, the inverter can not output reactive power since $Q=0$. Therefore, how to achieve both active power and reactive load sharing using only inverters?

4) The proposed controller consists of different layers such as cyber communication layer and electrical layer. The authors should add more implementation details. Meanwhile, how different layers coordinate with each other?

H. Bevrani University of Kurdistan 78/100

Resubmission Receipt

IEEE Transactions on Power Electronics - Manuscript ID **TPEL-Reg-2023-01-0057.R1**  

IEEE Transactions on Power Electronics <onbehalf@manuscriptcentral.com>

Mon, Mar 20, 2023, 7:39 PM ☆

20-Mar-2023

Dear |

Your manuscript entitled "Zero-Level Control Design in AC Microgrids: A Robust Multivariable Approach" has been **successfully submitted online** and is presently being given full consideration for publication in the IEEE Transactions on Power Electronics.

Your manuscript ID is **TPEL-Reg-2023-01-0057.R1**.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to Manuscript Central at <https://mc.manuscriptcentral.com/tpele-ieee> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Center after logging in to <https://mc.manuscriptcentral.com/tpele-ieee>.

Thank you for submitting your manuscript to the IEEE Transactions on Power Electronics.



Sincerely,
IEEE Transactions on Power Electronics Editorial Office


H. Bevrani

University of Kurdistan

79/100

Accept Decision Email

IEEE Transactions on Power Electronics - Decision on **Manuscript ID TPEL-Reg-2023-01-0057.R1**  

IEEE Transactions on Power Electronics onbehalf@manuscriptcentral.com 

Apr 15, 2023, 3:54 PM ☆

Dear

15-Apr-2023

It is a pleasure to accept your **manuscript** entitled "Zero-Level Control Design in AC Microgrids: A Robust Multivariable Approach" in its current form for publication in the IEEE Transactions on Power Electronics. The comments of the reviewer(s) who reviewed your **manuscript** are included at the foot of this letter. We ask you to include any of the minor changes requested by the reviewer(s) (if any) before final upload of the paper. Please note, **only minor editorial changes and small technical clarifications are permitted** before the final upload. These changes may entail small changes to text (not to exceed a paragraph) or captions, or fine-tuning figures. However figures and text may not be removed from the paper after acceptance. IEEE performs a final similarity check between the accepted **manuscript** and the uploaded paper. If changes are determined to be too extensive, the paper will be sent out for re-review, which will delay publication. For active content/multimedia papers: please add one line to your abstract describing the content and purpose of your active content (such as, "This paper is accompanied by a video file demonstrating xyz."

H. Bevrani

University of Kurdistan

80/100

Accept Decision Email

Editors' Recommendations:

Recommendation #1: **Accept with minor revisions** or without change (does not need to be reviewed again)

Recommendation #2: **Accept with minor revisions** or without change (does not need to be reviewed again)

Co-EC: 1

Comments to the Author (Required):
The paper is now suitable for publication

Associate Editor: 2

Comments to the Author (Required):
Thanks for the contribution.

Reviewer Responses:

Reviewer: 1

This paper proposes a high gain MIMO PI controller for microgrids in grid-connected and islanded modes. The presented approach provides advantages including circulating current minimization, robustness, and first-order closed-loop system dynamics. Experimental and simulation results are provided to verify the proposed method. My comments in [the previous review round](#) are addressed by the authors.

Reviewer: 2

Comments:
The authors addressed all my comments.

H. Bevrani

University of Kurdistan

81/100

Article Proof

From: eric.charbonneau@ieee.org <eric.charbonneau@ieee.org>

Sent: Friday, April 28, 2023 10:38 PM

To:

Subject: Your IEEE proof for TPEL3268865 is now available

Dear

The proof for your article, Zero-Level Control Design in AC Microgrids: A Robust Multivariable Approach, is ready for your review. You may access your proof via the IEEE Author Gateway by following the steps below. Kindly log in to the website upon receipt of this message so that we may expedite the publication process. Please note that we do not accept updated source files at this point. Please annotate the proof pdf and upload through the Author Gateway by 30 April 2023.

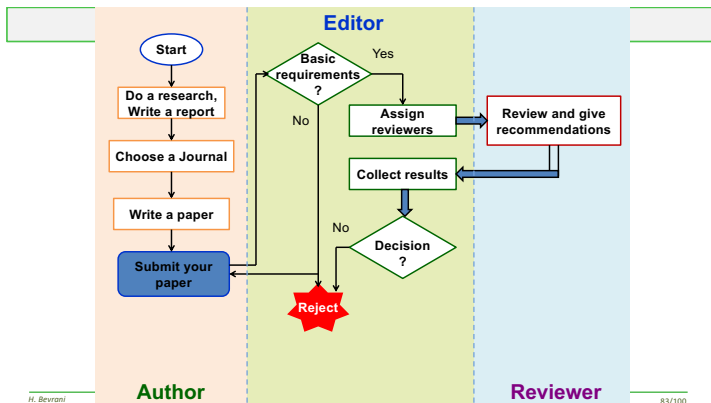
Please see the following instructions to retrieve your proof:

- If your e-mail client supports live Web browser links, please click on the link (URL) below to go to the login page to retrieve your proof. If your mail client does not support live links, run your browser software, copy the link below, paste it into the address box in your browser and press [Enter].
- You should now see the IEEE Author Gateway Login page in your browser.
- Use your IEEE Web Account User name and Password to Login.
- Click on the "Continue" button at the bottom of the Login box.
- You should now see the Article Tracker IEEE Author Gateway page, with links to the Article Status page where you can download your proof and any associated documents under Resources.

H. Bevrani

University of Kurdistan

82/100



H. Bevrani

83/100

Go ahead ...,
Never give up !



H. Bevrani

University of Kurdistan

84/100

Reject!

- Do not take it personally
- All researchers get rejected
- Reviewers/editors make mistakes
- You did not lose anything but have got reviewers' time and comments!
- See why it was rejected
- Revise, and submit to the same Journal or elsewhere




Example




Measurement-Based Under Frequency Load Shedding in Bulk Power Systems

Abstract- An attempt is made in this paper to design a new measurement-based under frequency load shedding (UFLS) scheme. In this way, firstly a new denoising methodology, based on a rolling averaging window, is proposed to prepare the received PMUs data for further processing. Afterwards, an iterative data driven based approach is proposed to estimate the frequency nadir and the time of minimum frequency occurrence in a short time using a first order polynomial function. Such fast estimation overcomes the issues related to the exist time delay. Moreover, it is

characteristics and system inertia, influence the magnitude of the power imbalance as well as the amount of load to be shed. These factors, however, are status-conditioned parameters and hence, should be appropriately tackled into the estimation problem. Accordingly, adaptive UFLS schemes are moving towards utilizing of real-time data, provided by PMUs [4]. This paper focuses on proposition of a new data driven based adaptive UFLS scheme. It relies on the accurate estimation of magnitude of the power imbalance, amount of shed load and

Submission Receipt Email

IEEE Transactions on Power Systems - Manuscript ID **TPWRS-00710-2020** 

to gnbehalf@manuscriptcentral.com Apr 30, 2020, 1:01 AM   

29-Apr-2020

Dear I

Your manuscript entitled "Measurement-Based Under Frequency Load Shedding Scheme in Bulk Power Systems" has been successfully submitted online and is presently being given full consideration for publication in the IEEE Transactions on Power Systems.

Your manuscript ID is **TPWRS-00710-2020**.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to Manuscript Central at <https://mc.manuscriptcentral.com/tpwrs-pes> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Center after logging in to <https://mc.manuscriptcentral.com/tpwrs-pes>.

Thank you for submitting your manuscript to the IEEE Transactions on Power Systems.

Sincerely,
IEEE Transactions on Power Systems Editorial Office

Decision Email

Subject: Paper **TPWRS-00710-2020**

From: IEEE Transactions on Power Systems <gnbehalf@manuscriptcentral.com>

To: <nh@power.ece.nbu.aq.ir>

Date: Sunday, 05/07/2020 7:26 PM

We regret to advise you that the Reviewing Committee is unable to accept the subject paper for publication as a PES Transactions paper.


Enclosed please find the comments of the reviewers which should serve to explain the recommendation of the reviewing committee. I hope you will find the explanations satisfactory.


Prof. Nikos Hatziargyriou, Editor in Chief,
Transactions on Power Systems

Received/Modified Version

A Data-Driven Under Frequency Load Shedding Scheme in Power Systems

New Submission Receipt Email

IEEE Transactions on Power Systems - Manuscript ID **TPWRS-01034-2021** 

to gnbehalf@manuscriptcentral.com Wed, Jun 30, 2021, 12:54 AM 

29-Jun-2021

Dear Dr.

Your manuscript entitled "A Data-Driven Based Under Frequency Load Shedding Scheme in Power Systems" has been successfully submitted online and is presently being given full consideration for publication in the IEEE Transactions on Power Systems.

Your manuscript ID is **TPWRS-01034-2021**.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to Manuscript Central at <https://mc.manuscriptcentral.com/tpwrs-pes> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Center after logging in to <https://mc.manuscriptcentral.com/tpwrs-pes>.

While your manuscript is undergoing review, you may also submit it in its current form to TechRxiv. IEEE's preprint server. By uploading your manuscript to TechRxiv you can quickly disseminate your work to a wide audience and gain community feedback. Any comments you receive on the TechRxiv submission have no bearing on the peer review process. Submit your manuscript at <https://www.techrxiv.org/>.

Thank you for submitting your manuscript to the IEEE Transactions on Power Systems.

Sincerely,
IEEE Transactions on Power Systems Editorial Office

Decision Email

From: IEEE Transactions on Power Systems <onbehalf@manuscriptcentral.com>

Sent: Sunday, September 26, 2021 11:02 AM

To:

Cc: nh@power.ece.ntua.gr

Subject: Paper TPWRS-01034-2021, A Data-Driven Based Under Frequency Load Shedding Scheme in Power Systems

After careful review we have determined that your paper might be of interest for publication in the IEEE Transactions on Power Systems, after revisions, if those revisions fully and properly address the concerns of the reviewers. The comments from the reviewers appearing below may include specific revisions that are mandatory and other changes suggested. You may have to make broader changes if necessary based on general comments provided by the reviewers.

I wish to emphasize that this is not a conditional acceptance.

It is, rather, a recognition by our reviewers and editors that your paper merits some interest. The reviewers of the original draft will be approached to assess the revised manuscript; at the discretion of the editor, additional reviewers may be included.

Please submit your revised paper within 60 days of receiving this letter. After 60 days the revision will expire and you will need an extension in order to submit the revised paper.

H. Bevrani University of Kurdistan 91/100

Response Letter and Received Version

Paper No. TPWRS-01034-2021

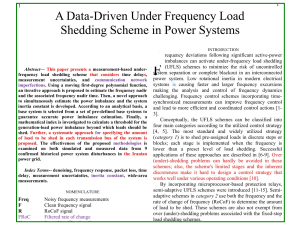
Response to Reviewers A Data-Driven Under Frequency Load Shedding Scheme in Power Systems

Dear Professor Nikos Hatzigiorgio

The authors would like to thank the editor and reviewers for all the time and effort devoted to this paper. The constructive comments, suggestions, the illustrative discussion and interest have added clarification to some points of the paper and have improved its quality and usefulness as a reference for further works in area of under frequency load shedding. The revised manuscript has been prepared based on the received notes, suggestions, and comments. We have considered all provided comments (point by point) as raised in the decision letter and described below. We believe that all the identified issues have been addressed.

Sincerely,

H. Bevrani University of Kurdistan 92/100



Resubmission Receipt

IEEE Transactions on Power Systems - Manuscript ID TPWRS-01034-2021.R1 [inbox](#)

IEEE Transactions on Power Systems <onbehalf@manuscriptcentral.com>

Mon, Nov 22, 2021, 7:23 PM

Dear Dr.

Your manuscript entitled "A Data-Driven Under Frequency Load Shedding Scheme in Power Systems" has been successfully submitted online and is presently being given full consideration for publication in the IEEE Transactions on Power Systems.

Your manuscript ID is TPWRS-01034-2021.R1.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to Manuscript Central at <https://mc.manuscriptcentral.com/tpwrs-ees> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Center after logging in to <https://mc.manuscriptcentral.com/tpwrs-ees>.

Thank you for submitting your manuscript to the IEEE Transactions on Power Systems.

Sincerely,
IEEE Transactions on Power Systems Editorial Office

H. Bevrani University of Kurdistan 93/100

Resubmission Again and Again ...

RE: Manuscript Submitted TPWRS-01034-2021.R3 [inbox](#)

IEEE Transactions on Power Systems <onbehalf@manuscriptcentral.com> <uok.ac.ir>

Sun, May 1, 2022, 3:43 PM

Dear Dr.

The Editor-in-Chief of the IEEE Transactions on Power Systems confirms receipt of the final files for

"A Data-Driven Under Frequency Load Shedding Scheme in Power Systems"

We have received the documents you submitted for the above-mentioned manuscript. If you have not already done so, please immediately submit the IEEE copyright form. To do this, please log on to your Author Center and find the paper in the "Manuscripts with Decisions" section; then click the "Transfer Copyright" link and follow the instructions to submit the form. Failure to submit the copyright may result in publishing delays.

Your paper will now be sent to the IEEE Publications Department for typesetting. You should receive PDF page proofs by e-mail in approximately 8 weeks.

Thank you very much for submitting your paper to the IEEE Transactions on Power Systems.

Sincerely,
IEEE Transactions on Power Systems Editorial Office

H. Bevrani University of Kurdistan 94/100

Accept Decision Email

From: IEEE Transactions on Power Systems <onbehalf@manuscriptcentral.com>

To:

Cc: nh@power.ece.ntua.gr <nh@power.ece.ntua.gr>

Sent: Sunday, May 1, 2022, 01:06:51 AM GMT+4:30

Subject: Paper TPWRS-01034-2021.R3, A Data-Driven Under Frequency Load Shedding Scheme in Power Systems

Congratulations! Your paper has been accepted.

Detailed instructions for final submission are provided below, but please:

1. Submit final source files within 2 weeks of the acceptance date through ScholarOne Manuscripts. Only typographical corrections are possible at this stage.
2. Once you have submitted the final files, process the copyright of your paper through ScholarOne Manuscripts.
3. Once you receive the proof of your paper (in about 4 weeks), correct it and submit corrections as soon as possible (following the procedure indicated in the proof email).

Thank you for choosing the IEEE Transactions on Power Systems!

H. Bevrani University of Kurdistan 95/100

Best Paper Award!

Best Paper Award



The IEEE Power & Energy Society and the Editorial Board of the IEEE Transactions on Power Systems wish to acknowledge the following authors

for their paper
"A Data-Driven Under Frequency Load Shedding Scheme in Power Systems"

IEEE Transactions on Power Systems, vol. 38, no. 2, pp. 1138-1150, March 2023

Jovica V. Milanović, Editor-in-Chief



H. Bevrani University of Kurdistan 96/100

Introduction

A good **Writer** has already been a good **Reader**.

Initial Steps

○ Scanning



○ Skimming



○ Noting



Some Initial Guidelines

- **Read critically:** assume that the authors are always correct
- **Read creatively:** Do these ideas have other applications or extensions?
- **Make notes** as you read



Ethics Principles



Do not do

○ Misconduct

1. Fabrication
2. Falsification
3. Plagiarism
4. Self Plagiarism

○ Questionable

1. Poor data storage
2. Misleading authorship
3. Raw/primary results
4. Access limitation
5. Unreal description

How to Avoid?

- Use your own words and ideas
- **Always** give credit to the source where you have received your information
- Put someone's exact words in quotes and give credit using **in-text citations**.

