POWER AND ENERGY (PE)

Technical Presentation Session PE6
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- Jawaharlal College of Engineering and Technology (JCET) Palakkad, Kerala, India
- JCET SB IAS Chapter
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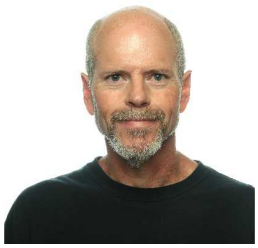
Organizers:

- Mr. Madhu Krishnan, Chair, JCET IEEE SB IAS Chapter | Ms. Krishna V, Vice Chair, JCET IEEE SB IAS Chapter
- Mr. Umesh M, Chair, JCET IEEE SB PES Chapter
- Dr. Peter Magyar, IAS Director of Chapter Development

SESSION PE6
Date: Thursday, 12 Nov 2020
Time:
01:00pm-02:30pm UTC (Coordinated Universal Time)
07:00am-08:30am CST (Central Standard Time, UTC-6)
06:30pm-08:00pm IST (Indian Standard Time, UTC+5:30)
Time converter: https://www.worldtimebuddy.com/

Keynote Presentation
Power Quality Implications of Distributed Generation



Dr. Mark Halpin, Professor, Auburn University, USA | IAS President 2007-08

Biography
Mark Halpin (M'93–SM'02–F'05) received the B.E.E., M.S., and Ph.D. degrees in electrical engineering from Auburn University, Auburn, AL, USA, in 1988, 1989, and 1993, respectively. Currently, he is a Professor in the Department of Electrical and Computer Engineering at Auburn University. His teaching interests include power systems, control systems, and network analysis. His research interests are in the areas of power system dynamic performance and power quality. Prof. Halpin is active in the IEEE Power Engineering Society, where he serves as Chair of the Task Force in charge of IEEE 519, in CIGRE, where he serves as Convener of the Working Group charged with revising the IEC Technical Reports dealing with emission limits for harmonics, voltage fluctuations, and unbalance, and in IEC, where he serves as Convener of IEC TC77/SC77A/WG2, which deals with voltage fluctuations and flicker.

Abstract: Interest in distributed generation, particularly applications of renewable energy resources such as wind and solar, has risen rapidly in recent years. Because these technologies almost always involve an inverter-based interconnection to the power system, numerous power quality issues can arise. Most existing standards and best practices are based on assumptions that are derived from power quality issues produced by power system loads which may not be applicable to energy producing equipment and installations. Modifications to existing approaches

are required and new developments are necessary. This presentation will provide an overview of the activities that are underway in IEEE and IEC regarding the modification of existing and the development of new standards and best practices for power quality management related to energy producing equipment and installations. Particular focus will be on harmonic and voltage fluctuation and flicker requirements.

IAS YP Presentation

Power System Measurement Outlier Detection and Missing Value Reconstruction Based on Modified Autoencoder

You Lin, PhD Candidate, Dallas, TX USA. | Graduated from Shandong University, Jinan, China. | Founder Chairwoman of Shandong University SB IAS Chapter

Biography: You Lin (S'15) received the B.S. and M.S. degrees in electrical engineering from Shandong University, Jinan, China. Currently, she is pursuing the Ph.D. degree in electrical engineering at the Department of Electrical and Computer Engineering, Southern Methodist University, Dallas, TX, USA. Her research focuses on machine learning and its application in power system load modeling, data analysis, and energy system forecasting.
You Lin was the founding chair of IEEE Shandong University and Zhejiang University Student Branch IAS Chapters. She was the IEEE IAS Student Branch Chapters Area Chair, R10 East Asia in 2018. As the general chair and session chair, she was a volunteer for organizing 2018 IEEE Student Conference on Electric Machines and Systems (IEEE SCEMS'2018), Huzhou, China, Dec. 14-16, 2018.

Abstract: Power system measurement is widely used in power system state estimation, fault diagnosis, load and renewable power generation prediction. Measurement data is often destroyed during production, collection, transmission, and analysis, such as data input errors caused by human behavior, measurement errors caused by interruption of communication equipment, and experimental errors caused by data sampling or extraction. Therefore, we propose an enhanced deep learning-based self-encoder structure for data reconstruction, taking into account the changing characteristics of missing data. Meanwhile, an easy-to-implement conditional estimation method based on probabilistic deep autoencoder is proposed to construct the interval for outlier detection and reconstruction.