第 5 届应用数学与信息科学国际会议

The 5th International Conference on Applied Mathematics and Information Science

(ICAMIS 2024)

会议手册
Conference Programme

主办单位

Organizer

国际管理科学与工程技术协会（IAMSET）

International Association of Management Science

and Engineering Technology

IAMSET®
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ICAMIS

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ICAMIS

I.会议介绍

I. CONFERENCE INTRODUCTION

会议背景

BACKGROUND

随着信息技术的飞速发展，各个领域的数据量呈爆炸式增长。无论是在金融、医疗保健、工程还是人工智能领域，都迫切需要强大的数学工具和信息科学方法来处理和分析这些大量数据。同时，复杂系统的研究日益成为研究的热点，如生态系统、社会网络、经济系统等。对这些复杂系统的理解和优化离不开应用数学与信息科学的深度交叉融合。

在此背景下，本次应用数学与信息科学国际会议围绕应用数学、数学与计算、纯数学、数学与人工智能、数学与优化等主题，旨在为全球相关领域的学者、专家和研究人员提供一个跨行业的平台，以交流和分享他们最新的研究成果、创新方法和技术，共同探讨前沿问题，促进数学和信息科学成果向实际应用的转化，也促进应用数学和信息科学的发展。

With the rapid development of information technology, the amount of data in various fields is increasing explosively. Whether in finance, healthcare, engineering, or artificial intelligence, there is an urgent need for powerful mathematical tools and information science methods to process and analyze these massive amounts of data. At the same time, the study of complex systems has increasingly become the focus, such as ecosystem, social network, economic system, etc. The understanding and

optimization of these complex systems cannot be separated from the deep cross-integration of applied mathematics and information science.

In this context, the International Conference on Applied Mathematics and Information Science, focusing on the topics of Applied Mathematics, Mathematics and Computation, Pure Mathematics, Mathematics and Artificial Intelligence, Mathematics and Optimization, aims to provide a cross-industry platform for scholars, experts and researchers in related fields around the world to exchange and share the latest research results, innovative methods and technologies, discuss cutting-edge issues together, and promote the transformation of mathematical and information science achievements into practical applications and also promote the development of applied mathematics and information science.

会议目的

OBJECTIVES

ICAMIS 2024 旨在汇集领先的学术科学家，研究人员和研究学者，交流和分享他们在应用数学与信息科学等方面的经验和研究成果。它还为研究人员、从业者和教育工作者提供了一个重要的跨学科平台，以展示和讨论材应用数学与信息科学领域的最新创新、趋势、关注以及遇到的实际挑战和采用的解决方案，凭借其高质量，它为学生、学者和研究人员提供了非凡的价值。

ICAMIS 2024 aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of applied mathematics and information science. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and

discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of applied mathematics and information science. With its high quality, it provides an exceptional value for students, academics and researchers.

会议主题

TOPICS

会议主题 Topics	
主题一/Topic 1：	Applied Mathematics
主题二/Topic 2：	Mathematics and Computation
主题三/Topic 3：	Pure Mathematics
主题四/Topic 4：	Mathematics and AI
主题四/Topic 5：	Mathematics and Optimization

ICAMIS

II.日程安排

II. CONFERENCE SCHEDULE

Nov. 20 9:00-17:30	会议测试 Conference Rehearsal（9:00-17:30）		
Nov. 21 9:00-18:10	开幕式 Opening Ceremony（9:00-9:05）		
	嘉宾演讲 Keynote Speech（9:05-12:05）		
	时间 Time	报告题目 Title	报告人 Speaker
	9:05-9:30	Blockchain-Based Secure Edge Computing Data Offloading Mechanism	Prof. He Qiang （何强）
	9:30-9:55	Integral Inequalities: Past and Future	Prof. Juan Eduardo Nápoles Valdés
	9:55-10:25	Mathematical Modeling and Machine Learning for Computational Analysis of Animal Behavior	Prof. Ali Turab
	10:25-10:55		Prof. D. Easwaramoorthy
	10:55-11:20	Untangling the Cantilever Beam Perpexility by Employing Coupled Fixed Point Theory In GV-FMS	Dr. Manish Jain
	11:20-11:45	Error Analysis of Nonlinear Time-fractional Diffusion Equation with Generalized Memory Kernel	Dr. Aniruddha Seal
	11:45-12:05	On Matrix Transformation of Complex Uncertain Sequences	Dr. Birojit Das
	午餐时间 Lunch Break（12:05-14:00）		

嘉宾演讲 Keynote Speech（14:00-18:00）		
时间 Time	报告题目 Title	报告人 Speaker
14:00-14:25	Integrating Fractional Calculus and Neural Networks: Advanced Models for Disease Spread and Treatment Dynamics	Ramsha Shafqat
14:25-14:50		Dr. Ubaid Ur Rehman
14:50-15:20		Dr. Zeeshan Ali
15:20-15:50	Maple and Mathematics	Prof. Rajesh Kumar Gupta
15:50-16:15	Mathematical and Numerical Analysis of the Penalty Method for Unilateral Contact Problems with Time-Fractional Derivatives	Prof. Mustapha Bouallala
16:15-16:45	Primal Hybrid Method for Quasilinear Parabolic Problems	Dr. Ravina Shokeen
16:45-17:15	Controlling Chaos and Instability: Insights from Climate Dynamics and Ecological Systems with Fractional Modeling	Mr. Arkaprovo Chakraborty
17:15-17:40		Prof. Seyed Ehsan Fatemi
17:40-18:00	Solving Ordinary Differential Equations with Neural Networks	Dr. Zoleikha Soori
论文推荐 Paper Recommend（18:00-18:05）		
Recommend Papers 推荐引用论文		
闭幕式 Closing Ceremony（18:05-18:10）		

Note: All time above is for GMT+8:00 (Beijing Time)

III.嘉宾介绍

III. PRESENTER INTRODUCTION

主讲嘉宾

KEYNOTE SPEAKERS

Ubaid Ur Rehman, Visiting Faculty

International Islamic University, Pakistan

Ubaid Ur Rehman received his Ph.D. in Mathematics in 2023 and is a visiting faculty at International Islamic University, Islamabad, Pakistan. He is dedicated and accomplished with a strong passion for advancing mathematical theory and its practical applications. His research interests focus on fuzzy sets, generalization of fuzzy sets, soft set theory, pattern recognition and cluster analysis, etc. He is adept at conducting ground breaking research, analyzing complex problems, and developing innovative solutions and is committed to lifelong learning, staying at the forefront of mathematical developments, and mentoring the next generation of mathematicians and is seeking opportunities to contribute expertise and insights to cutting-edge mathematical research and

academic institutions. He is proven track record of publishing more than 70 research papers with 900+ citations in reputable journals and presenting findings at prestigious conferences up to date.

Juan Eduardo Nápoles Valdés, Professor

National University of the Northeast, Argentina;
National Technological University, Argentina

Prof. Juan Eduardo Nápoles Valdes is a PhD in Mathematical Sciences (1994 at the Universidad de Oriente, Santiago de Cuba), was President of the Cuban Society of Mathematics and Computing and is currently Professor at the National University of the Northeast and the National Technological University of Argentina. His research areas include mathematics education, applied mathematics, ordinary differential equations, nonlinear analysis, history of science, differential equations, differentiation, nonlinear systems, fractional calculus, etc. He directs the Nonlinear Analysis Group (UNNE), research projects and several PhD and Bachelor students. He's been a reviewer for over 40 journals, "Advances in Difference Equations", "American Journal of Computational Mathematics", "Applications and Applied Mathematics: An International Journal", etc. He also serves as a guest editor and is a member of the editorial boards of several journals. He has published

over 200 articles and has been cited many times.

Rajesh Kumar Gupta, Professor & HoD

Department of Mathematics, School of Basic Sciences, Central University of Haryana, India

Dr. Rajesh Kumar Gupta is currently working as a Professor of Mathematics and HoD and Dean at Department of Mathematics, School of Basic Sciences, Central University of Haryana, India. He has rich experience of teaching and has supervised 13 Ph.D. theses and 12 M.Sc. theses. His research interests revolve around the applications of symmetry analysis to nonlinear partial differential equations (NLPDEs), including several nonlinear systems including variable coefficients KdV, Boussinesq, BBM and Broer-Kaup equations, Coupled Higgs field equation, Hamiltonian amplitude equation, Coupled Klein-Gordon-Schrödinger. He has published more than 100 research papers in refereed journals; 76 research papers are SCI listed with total impact factor more than 200. He is principal investigator of two major research projects funded by CSIR and NBHM. He is principal investigator of DST FIST Project of grant 100 Lacs. He is one of the collaborator in the research project with Dr. Gaukhar Shaikhova, Eurasian National University, Kazakhstan approved by the National Scientific Council of Kazakhstan

project (grant) "AP23487348-Investigation of the integrable nonlocal nonlinear equations" and will be financed for 2024-2026. He has been listed Top 0.5% of all scholar worldwide (Top Scholar–Prior 5 years) in 2024 by ScholarGPS List (Rank 64048 in overall (All Fields) category, Rank 24 in Partial Derivative category). He has also been listed Top 2% Most Influential Scientists (Career Impact, 1960-2022, Rank 63157) and (Single Year Publication List, Rank 155074) in 2023 by Stanford University. Central University of Haryana has given Best Research Award in 2020. He has been selected for prestigious UGC Research Award for the period 2016-18, and completed the award on May, 2018. Thapar University has awarded PIS (Performance Incentive Scheme) for five consecutive years (2009-2013) for his academic excellence (teaching and research).

D. Easwaramoorthy, Associate Professor

Department of Mathematics, Vellore Institute of Technology

D. Easwaramoorthy received the Ph.D. Degree in Mathematics from The Gandhigram Rural Institute (Deemed to be University), Dindigul, India. He currently serves as an Associate Professor in the Department of Mathematics, School of Advanced Sciences, Vellore Institute of

Technology (VIT), India. His research interests include Fractal Analysis, Fractal Dimensions, Fuzzy Metric Spaces, Fuzzy Mathematics, Signal and Image Analysis, Biomedical Signal Analysis and Biomedical Image Analysis. He has published numerous research articles in the reputed scientific journals and conference proceedings. He is a life member of many professional societies such as Indian Mathematical Society, Ramanujan Mathematical Society, The Indian Science Congress Association, International Society of Difference Equations, Academia for Advanced Research in Mathematics, MathTech Thinking Foundation, Indian Society of Theoretical & Applied Mechanics and others.

He Qiang (何强), Professor

College of Medicine and Biological Information Engineering, Northeastern University, China

Prof. He Qiang received his Ph.D. degree in computer application technology from Northeastern University, Shenyang, China, in 2020. From 2018 to 2019, he worked as a visiting PhD researcher at the School of Computer Science and Technology, Nanyang Technical University, Singapore. He is currently an Associate Professor at the College of Medicine and Biological Information Engineering, Northeastern University, Shenyang, China. His research interests include machine

learning, social network analytics, data mining, healthcare, and infectious disease informatics. He has published more than 40 journal articles and conference papers, including in IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cybernetics, IEEE Transactions on Cloud Computing, IEEE Transactions on Computational Social Systems, and IEEE Transactions on Cognitive and Developmental Systems.

Seyed Ehsan Fatemi, Associate Professor

Water Engineering Department, Faculty of Agriculture and Natural Resources, Razi University, Iran

Dr. Seyed Ehsan Fatemi is an Associate Professor at the Water Engineering Department, Faculty of Agriculture and Natural Resources, Razi University. He holds a PhD in Civil Engineering and his research interests encompass Deep Learning and AI, Data Science and Machine Learning, Integrated Water Resources Management (IWRM), Multi-Criteria Decision Making, Conflict Resolution among Stakeholders, System Dynamics in Water Resources, Systems Engineering of Hydro-systems, Climate Change Impacts on Water Resources, and Decision Making under Uncertainty. Dr. Fatemi has supervised over 20 MSc students and 5 PhD students and has provided training on IWRM

and water quality models to regional water specialists in Kermanshah, Ilam, and Kurdistan provinces. He has authored two books and published more than 10 academic papers. In addition, he served as the Executive Director of the 3rd National Conference on Deficit Irrigation and Use of Unconventional Water in Dry Regions at Razi University in February 2023 and was awarded the Best Lecturer in Water and Environment in Iran's water and electricity industry in 2022.

Ramsha Shafqat, PhD Candidate
Thammasat University, Thailand

Ramsha Shafqat is a PhD candidate at Thammasat University, Thailand, and her research interest are Fuzzy Theory, Fixed Point Theory, Fractional Calculus, Fractional Differential Equations, Bio-Mathematics, and Fluid Mechanics. She published more than 36 articles in SCI journals with good impact factors, and is serving many journals as a reviewer, for example "Symmetry", "Qualitative Theory of Dynamical Systems" and "Annals of Mathematics and Physics". Dr. Ramsha Shafqat is also involved in several research projects in related fields, hopes to make her own contribution in this field.

Mustapha Bouallala, Accredited Associate Professor

Department of Mathematics and Computer Science, Faculty of Sciences and Techniques, Cadi Ayyad University, Morocco

Mustapha Bouallala holds Ph.D. in Applied Mathematics and currently is working as an Accredited Associate Professor at the Department of Mathematics and Computer Science, Faculty of Sciences and Techniques, Cadi Ayyad University, Morocco. He is charge of supervision of Bachelor's and Master's theses. His research interests focus on mathematical modeling, numerical analysis, theory of partial differential equations (PDEs), optimization and scientific computing. He has published more than 20 papers in international journals. He often attended national and international conferences and delivered his reports.

Zeeshan Ali, Scholar

School of Engineering, Monash University, Malaysia

Dr. Zeeshan Ali is a passionate and motivated mathematician with over seven years of research experience and several years of teaching

experience, graduated from School of Engineering, Monash University, Malaysia. His research interests lie in infectious disease mathematical modeling, mathematical biology, ordinary and fractional calculus, fixed point theory, stability analysis, numerical analysis, boundary value problems, machine learning based mathematical modeling, bifurcation analysis, chaos theory, etc. He applied his strong analytical and communication skills to conduct and publish 24 papers in dynamical systems and epidemiology in reputed peer-reviewed journals, and presented his research output at various international conferences in Turkey, Greece, and China.

Birojit Das, Assistant Professor

Department of Mathematic, Amity University Kolkata, India

Birojit Das holds Ph.D. in the realm of uncertain sequence space and currently works as an assistant professor at Department of Mathematic, Amity University, Kolkata, India. His areas of interest focus on uncertainty theory, credibility theory, topology, fuzzy mathematics and sequence space. He has published 45 journals articles and 4 book chapters. He is the life member of the Indian Mathematical Society and the Indian Science Congress Association, and also serves as the reviewer for some

journals including Soft Computing, Open Journal of Discrete Mathematics, Annals of Fuzzy Mathematics and Informatics, Helyon, etc.

Zoleikha Soori, Postdoctoral Researcher

Khaje Nasir Toosi University of Technology (KNTU), Tehran, Iran

Zoleikha Soori received her Ph.D. in Applied Mathematics, Numerical Analysis and completed her postdoctoral research from Khaje Nasir Toosi University of Technology (KNTU), Tehran, Iran respectively in 2019 and 2022. She has rich teaching experience and currently works at the same university. Her research interests include machine learning, neural networks, fractional calculus, financial mathematics, proper orthogonal decomposition methods, spectral collocation method, diffusion-wave equation, etc. She has published 10 journal articles, one book and 5 conference papers. Dr. Zoleikha Soori also serves as the reviewer for some journals like Mathematical Methods in the Applied Science, Mathematics and Computers in Simulation, Numerical Algorithms and so on.

Arkaprovo Chakraborty, PhD Candidate

CHRIST (Deemed to be University), Bengaluru, India

Arkaprovo Chakraborty is a PhD candidate at the Department of Mathematics, CHRIST (Deemed to be University), Bengaluru, India. His research focuses on Nonlinear Dynamics, Mathematical Modeling, Chaos Control and Synchronization, Bifurcation Analysis, Fractional Calculus, Differential Equations, Numerical Methods, Stochastic Modeling, and Sensitivity Analysis. Dr. Chakraborty has published four journal articles and serves as a reviewer for the Elsevier journals Chaos, Solitons and Fractals and Computers and Mathematics with Applications. He is also active in seminars, webinars, Workshops and conferences where he hopes to contribute.

Ravina Shokeen, Assistant Professor

World College of Technology and Management (WCTM), Haryana, India

Dr. Ravina Shokeen is currently working as an Assistant Professor in

World College of Technology and Management, Gurgaon, India. She received her PhD degree from The LNM Institute of Information Technology, Rajasthan, India. Her research interest is primarily in the area of numerical approximations of partial differential equations. Her expertise includes construction and convergence analysis of finite element methods, finite difference schemes. She has published 4 journal papers and presented 5 papers in conferences.

Aniruddha Seal, Postdoctoral Fellow

Department of Mathematics, Indian Institute of Science (IISc), Bangalore, India

Dr. Aniruddha Seal has rich experience of teaching and research and served as the Teaching Assistant at Indian Institute of Technology Guwahati, India, and got his Ph.D. from Indian Institute of Technology Guwahati, India in 2024 and currently is a Postdoctoral Fellow in the Department of Mathematics at Indian Institute of Science, Bangalore, India. His research interests lie in differential equations, fractional differential equations, numerical methods, finite-difference method, finite element method, etc. He has published 5 journal papers. He often attended academic conferences and presented his works.

Manish Jain, Assistant Professor

Ahir College, Rewari, Haryana, India

Dr. Manish Jain holds a doctoral degree from the prestigious JC Bose University of Science & Technology, YMCA Faridabad, India. He currently serves as an Assistant Professor of Mathematics at Ahir College, Rewari. His research specialization lies in Fixed Point Theory and its applications, with expertise in Real Analysis, Mathematical Analysis, Functional Analysis, Sequences and Series, Differential Equations, and both Applied and Pure Mathematics. Dr. Jain has published over 30 publications in international refereed journals and 12 papers presented at conferences, along with 4 published conference papers. His research findings have practical applications in various real-life scenarios, including solutions for Elastic Beam Boundary Value Problems, Web Coupling of Cylinders in Space Satellites, and Traffic Control Systems in chaos theory. Dr. Jain was awarded the "Best Researcher Award" at the National Faculty Award 2023-24 by Novel Research Academy, Puducherry, India.

Ali Turab, Associate Professor

School of Software, Northwestern Polytechnical University, Xi'an, Shaanxi, China

Ali Turab holds Ph.D. in Mathematics and currently works as an Associate Professor at School of Software, Northwestern Polytechnical University, China. He has rich academic teaching and advisory experience. His research interests lie in Computational Modeling of Human and Animal Behavior, Mathematical Epidemiology and Disease Dynamics, Qualitative and Quantitative Analysis of Nonlinear Systems, Probabilistic and Machine Learning Models in AI, etc. He participates in two research projects as Co-PI or PI and has published nearly 40 journal articles since 2018 and one book chapter. He also serves as the Editorial Teram Member of some journals like Research and Practice of Mathematics & Statistics, Transactions on Computational and Applied Mathematics, Journal of Nonlinear Science and Complexity, etc. He also serves as the reviewer for 15 journals. He often attended academic conferences and gave his invited talks and presentations.

IV.组织机构

IV. ORGANIZATION

ICAMIS 2024 国际会议主办单位国际管理科学与工程技术协会（IAMSET）于 2010 年在香港注册成立，为合法运营的专业机构，在郑州设立有办事处。业务范畴包括理学、自然科学、社会科学、工程科学、信息学、医学等，涵盖了国际 STEM 的全部学科：科学（Science），技术（Technology），工程（Engineering），数学（Mathematics）等，并通过组织国际学术会议、论坛、研讨会等多种学术交流活动，为来自世界各地的专家学者建立了学术交流的优质平台。

协会通过组织并承办技术研讨会与来自全球的学术机构或个人建立良好的合作关系，为各国学者提供互相学习、自由交流的平台，为年轻学者提供机会，使其能够在实践中撰写优秀学术成果、了解学术成果出版的操作流程，从而提升自身以及团队的学术水平。同时为推进和传播管理科学、工程技术等前沿研究提供强有力的支持。

国际管理科学与工程技术协会与多家世界知名出版集团和多位期刊主编建立了良好的合作关系，如学术出版社（Academic Press），施普林格出版社（Springer），美国机械工程师协会（ASME），美国科学出版社（American Scientific Publishing）等出版社。

协会承接国际学术会议举办，国际人才引进，高分学术论文指导，优秀论文推荐发表，论文推广等学术活动。国际管理科学与工程技术协会努力践行以上使命，以加强与各国学术机构之间的合作，促进国际学术交流。
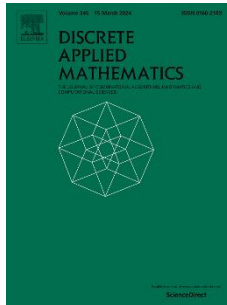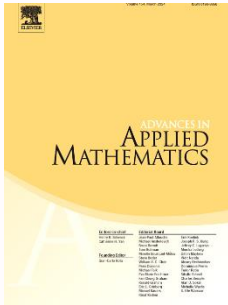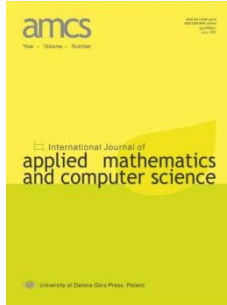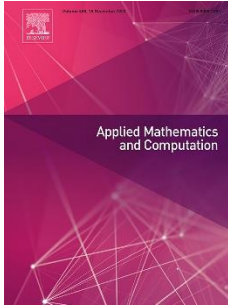
V.会议主席

V. CONFERENCE CHAIRMAN

Dr. Zhenling Liu

Henan University of Technology, China

Prof. Zhenling Liu is the associate professor at the School of Management, Henan University of Technology and is charge of teaching the courses, including "Quantitative Analysis", "Comprehensive Experiment on Application of Statistical Analysis Software", "Econometrics", "Marketing Research and Decision Making", and "Frontier of Management", etc. His research interests focus on energy-economy-environment system and sustainable development. Prof. Liu presided or participated in several projects and has published more than 90 papers in national and international journals and 13 books. He also severs as the associate editor of Journal of Sustainable Science and Management, and the editor of Advances in Industrial Engineering and Management. Prof. Liu has won several awards, including 3 provincial and ministerial science and technology progress awards.

VI.期刊支持

VI. RELATED RENOWNED JOURNALS

VII.参与信息

VII. PARTICIPATION INFORMATION

会议时间和方式

Conference Time and Way

● 北京时间 2024 年 11 月 20 日, 9:00-17:30 会议测试

November 20, 2024, 9:00-17:30 (Beijing Time): Conference Rehearsal

● 北京时间 2024 年 11 月 21 日, 9:00-17:30 线上会议

November 21, 2024, 9:00-17:30 (Beijing Time): Online Conference

● 请提前下载腾讯会议或 ZOOM 并注册账号

Please install VooV Meeting or ZOOM on your PC and create an account in advance.

● 请各位嘉宾于会议当天提前进入会议室,谢谢!

Please speakers join the VooV Meeting or ZOOM 5 minutes before the scheduled time on November 21, 2024 (Beijing Time). Thanks.

会议入口

Conference Entrance

Way 1: VooV Meeting

● 会议测试入口/Conference Rehearsal Entrance

链接：https://meeting.tencent.com/dm/4HP2abRqFgzo

#腾讯会议：968-470-216

会议密码：2024

Link: https://meeting.tencent.com/dm/4HP2abRqFgzo

Conference ID: 968-470-216

Password: 2024

● 正式会议入口/Online Conference Entrance

链接：https://meeting.tencent.com/dm/tQeuGzTxyePm

#腾讯会议：720-316-941

会议密码：2024

Link: https://meeting.tencent.com/dm/tQeuGzTxyePm

Conference ID: 720-316-941

Password: 2024

Way 2: ZOOM

● 会议测试入口/Conference Rehearsal Entrance

链接：

https://us06web.zoom.us/j/84163043498?pwd=WtQFDc2A6K4

Wp6vi7aEaDaHbFqkabV.1

#ZOOM 会议：841 6304 3498

会议密码：241120

Link:

https://us06web.zoom.us/j/84163043498?pwd=WtQFDc2A6K4Wp6vi7a

EaDaHbFqkabV.1

Conference ID: 841 6304 3498

Password: 241120

- 正式会议入口**/Online Conference Entrance**

链接：

https://us06web.zoom.us/j/85342474685?pwd=1hwG8c4OPa78

nDD9lbQmKz5auL02zK.1

#腾讯会议：853 4247 4685

会议密码：241121

Link:

https://us06web.zoom.us/j/85342474685?pwd=1hwG8c4OPa78nDD9lbQ

mKz5auL02zK.1

Conference ID: 853 4247 4685

Password: 241121

● 其他参会入口

微信视频号直播—**WeChat Channels Live**

抖音直播—**TikTok (Chinese version) Live**

Note: We will upload the conference record to TikTok, WeChat Channel, Twitter, YouTube to promote the conference and your article after the conference.

联系方式

Contact Us

会务组

CONFERENCE AFFAIRS GROUP

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icamisinfo@163.com