

Adaptation and Resilience of Transportation
and Logistics in the Post-Pandemic World



June
28-30 2021

2nd CCAPPTIA Conference Program

Venue: Online

Registration: www.ccapptia.com/21conference

International Workshop on Climate Change Adaptation Planning for Ports, Transportation Infrastructure, and the Arctic (CCAPPTIA)

May 3-4, 2018 (Thu and Fri)
Fort Garry Campus, University of Manitoba
Winnipeg, MB, Canada

Organized by:



Supported by:



About Our Conference

About CCAPPTIA

CCAPPTIA is an international forum that brings together leading experts, stakeholders, and right holders from academia, government, industry, consultants, interest groups, and community groups in addressing the challenges and opportunities posed by climate change and the Arctic. It strives to consolidate and coordinate Canadian and global research and development activities related to strategy and policy implementation under the context of climate adaptation planning, as well as Arctic shipping and development. For more information, please see www.ccapptia.com.

Our Objectives

Transport infrastructures are increasingly affected by the impacts posed by natural hazards like pandemics and climate change. Because they are vital for trade and communications, this situation has significant implications for the local, national, and global economy and human welfare. The time has come for a paradigm shift in how transport infrastructures and other supply chain components plan for and enact new strategies. Also, adaptation and resilience to natural hazards create opportunities to enhance well-being and regional development, as exemplified by the possible restructuring of the current supply chain systems. This is possible only if effective solutions are introduced and implemented through efficient collaborative efforts from different disciplines and sectors.

Why Now ?

Transport and supply chain facilities are increasingly affected by the impacts posed by natural hazards, such as pandemics and climate change. Because they are vital for trade and communications, they pose significant implications to the local, national, and global economy and human welfare. The time has come for a paradigm shift in how transport infrastructures and

other supply chain components plan for and enact new strategies. Also, adaptation and resilience to hazards create opportunities to enhance well-being and regional development, as exemplified by the possible restructuring of the current supply chain systems. This is possible only if effective solutions are introduced and implemented through efficient collaborative efforts from different disciplines and sectors.

Theme

Adaptation and Resilience of Transportation and Logistics in the Post-Pandemic World

SPONSORS AND SUPPORTERS

We genuinely appreciate your support in organizing the conference!

This conference is supported by the Social Science and Humanities Research Council of Canada (SSHRC), VTC China, the GENICE Project, University of Manitoba, Hong Kong Community College of the Hong Kong Polytechnic University, Institute of Seatransport, KEDGE Business School, and the University of Bologna.



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Schedule

Day 1 (based on China time (GMT +8))

Session 1 (Chairman: Prof. Adolf K.Y. Ng, UIC, China)

- 15:00-15:15 Welcome Remarks
- 15:15-16:15 Presentations
- 16:15-16:30 Break and Photo-Taking

Session 2 (Chairman: Prof. Yingen Ge, Shanghai Maritime University, China)

- 16:30-17:30 Presentations
- 17:30-18:00 Discussions and Wrap-Up for Day 1

Day 2 (Based on France time (GMT +2)*summer daylight saving time)

Session 3 (Chairman: Dr. Jason Monios, Kedge Business School, France)

- 13:00-13:15 Welcome Remarks
- 13:15-14:30 Presentations
- 14:30-14:45 Break and Photo-Taking

Session 4 (Chairman: Mr. Yufeng Lin, UIC, China)

- 14:45-16:00 Presentations
- 16:00-16:30 Discussions and Wrap-Up for Day 2

Day 3 (based on Manitoba (MB), Canada time (GMT -5)*summer daylight saving time)

Session 5 (Chairman: Dr. Changmin Jiang, University of Manitoba)

- 09:00-09:15 Welcome Remarks
- 09:15-10:30 Presentations
- 10:30-10:45 Break and Photo-Taking

Session 6 (Chairman: Dr. Mawuli Afenyo, University of Manitoba, Canada)

- 10:45-11:30 Presentations
- 11:30-12:00 Discussions and Wrap-Up for Day 3

	Beijing time GMT + 8	France Time GMT + 2	Manitoba time GMT - 5
28-Jun	15:00 - 18:00	09:00 - 12:00	02:00 - 05:00
29-Jun	19:00 - 22:30	13:00 - 16:30	06:00 - 09:30
30-Jun	22:00 - 01:00	16:00 - 19:30	09:00 - 12:00

*The time is presented in 24-hour format.

Day 1 (based on China time (GMT +8))

Session 1 (Chairman: Prof. Adolf K.Y. Ng, UIC, China)

- 15:00 -15:15 Welcome Remarks
- 15:15 -15:30 Presentation#1

Title: A Study of the Opportunities from the Cruising in the Arctic Region

Abstract: The expansion of cruise tourism in the Arctic region has posed substantial implications on a cruise industry. Surprisingly, many cruise liners are currently not members of the Association of Arctic Expedition Cruise Operators. Hence, their awareness, adaptation strategies and attitudes to cruising in the Arctic region are ambiguous and under-researched. In turn, we analyze what obstacles do cruise industry face? What is the most preferred cruise itinerary in the cruisers preference? Which cruise itinerary generates the most social-economic impact in the future? This preliminary study generates invaluable insight on the adaptation strategies and practices for cruise industry and other business sectors



Dr. Yui-yip (Joseph) Lau
College of Professional and Continuing Education, The Hong Kong Polytechnic University, Hong Kong, China

Dr. Lau Yui Yip is a Lecturer from the Division of Business and Hospitality Management, College of Professional and Continuing Education, The Hong Kong Polytechnic University. Dr Lau has published more than 210 research papers in international journals and professional magazines, contributed 10 book chapters, 2 books and presented numerous papers in international

conferences. He has collaborated with scholars from more than 20 countries and regions spreading over five continents on research projects.

- 15:30 - 15:45 Presentation#2

Title: Influences of the COVID-19 on China's Global Maritime Container Shipping -A Network Perspective

Abstract: In order to investigate the Influences of the COVID-19 on China's international shipping network, this research builds a weighted network model of China's global container shipping based on the service information of some world-leading container liners from February 2020 to February 2021. The dynamic changes of the spatial pattern of China's international shipping network during the COVID-19 period are quantitatively analyzed from three aspects: its container shipping capacity, topological characteristics, and the centralities of ports within the shipping network. The analysis results show that in the early stage of the outbreak of the COVID-19, the shipping route lost more than half of the capacity.



Dr. Chengpeng Wan
Wuhan University of Technology, China

Chengpeng Wan is Assistant Professor of Intelligent Transport Systems Research Center, Wuhan University of Technology, China. He received his BSc in Marine Engineering from Wuhan University of Technology in 2012, and PhD in Maritime and Transport Engineering from Liverpool John Moores University, UK in 2019. Dr Wan's major research interests include maritime safety and security analysis, risk based multiple attribute decision

making in maritime field, applications of complex network in maritime transportation and resilience management of transport systems. He has authored 4 book chapters, 20 refereed journal papers and 14 refereed conference papers.

15:45 - 16:00 Presentation#3

Title: A design-based research framework for simulating climate change with virtual reality

Abstract: Design-based research (DBR) is a type of research methodology used in the field of learning sciences. In order to provide a preventive approach for the public to experience climate changes, we proposed to develop a DBR framework for the development of VR program for simulating climate change. The basic process of DBR involves interventions to develop solutions to the specified problems. Then, the interventions will be tested to investigate the effectiveness of the provided solution. This process maybe iterates in order to improve the VR scenarios development for the changing climate environments while collecting feedback from participants



Dr. Tang Yuk Ming
The Hong Kong Polytechnic University (PolyU), Hong Kong, China

Dr. YM Tang received his B.Sc. and M.Phil. from The Chinese University of Hong Kong (CUHK). He was awarded a Ph.D. degree from the same university. He worked as a postdoctoral fellow at the Faculty of Medicine at CUHK after graduation. Currently, he is teaching in the Department of Industrial and Systems Engineering, the Hong Kong Polytechnic University (PolyU). Dr. Tang is the Lab-in-charge in Integrated Product Design (IPD) and deputy Lab-in-charge of the Ng Tat Lun (NTL) Digital Factory (DF) in the department. His research interests include virtual reality (VR)/ mixed reality (MR), artificial intelligence (AI), blockchain technology, computer-aided design (CAE), and healthcare applications. His works are widely recognized by the industries. He was invited to be a speaker at a Hong Kong Hospital Authority (HA) convention for the healthcare symposium. He was also a presenter in one episode of Innovation GPS", a television program on the local channel TVB.

16:00 - 16:15 Presentation#4

Title: Global port supply chain development along the Belt and Road

Abstract: Thanks to China's "Going out" strategy and the Belt and Road Initiative, China's overseas investment has been made along the New Maritime Silk Road. This paper explores the current situation in China's global port supply chain development and draws its impacts and implications on the global maritime transportation and logistics.



Prof. Paul Tae-Woo Lee
Ocean College, Zhejiang University, China.

Paul Tae-Woo Lee is a Professor and Director at Maritime Logistics and Free Trade Islands Research Center, Zhejiang University in China. His recent research interest lies in the impacts of the Belt and Road Initiative in maritime transport and logistics. He is EIC of Journal of International Logistics and Trade.

16:15-16:30 Break and Photo-Taking

Session 2 (Chairman: Prof. Yingen Ge, Shanghai Maritime University, China)

16:30 -16:45 Presentation#5

Title: Climate change research on transportation systems: Climate risks, adaptation and planning

Abstract:This presentation elaborates a critical review on climate risks, adaptation strategies and planning in the context of road and rail transportation systems. It aims to conduct a rigorous survey, to highlight any significant research gaps not addressed in past studies and to analyse current emerging topics to guide future directions.



Dr. Tianni Wang
College of Transport & Communications of Shanghai Maritime University
Tianni Wang is an assistant professor at the College of Transport & Communications of Shanghai Maritime University, with a PhD degree in Management Studies at Liverpool John Moores University in the UK. Since 2020, she has served as the secretary of the water transport department of the World Transportation Congress (WTC), organized and participated in the 22nd annual meeting of China Association for science and technology, and large-scale international conferences such as the International Young Scholars online forum.

Tianni's current research covers transportation, logistics and supply chain management, climate change and adaptation planning. Key issues that she has been tackling include risks and uncertainties posed by climate change on ports, roads and railways, and multi-regional transport safety and adaptation planning in Canada, the UK and China.

16:45 -17:00 Presentation#6

Title: E-commerce and COVID-19 outbreak in Japan

Abstract: In this study, a panel data survey covering multiple time points and analysis, by applying the technology acceptance model based on structural equation modeling, were conducted to understand the changes in the psychological mechanisms of using e-commerce by Japanese consumers before and after the COVID-19 outbreak.



Dr. Tomoya Kawasaki
Department of Systems Innovation, School of Engineering, The University of Tokyo, Japan

Tomoya Kawasaki is a Lecturer at Department of Systems Innovation, School of Engineering, The University of Tokyo, Japan. He received DEng from Tokyo Institute of Technology, Japan in 2012, MEng from Asian Institute of Technology, Bangkok, Thailand in 2008, and BEng from Nihon University, Tokyo, Japan in 2006. He worked as a researcher at Japan Maritime Center in 2011-2013, Assistant Professor at Nihon University in 2013-2016 and Assistant Professor at Tokyo Institute of Technology in 2016-2020. His research interests are Supply Chain Management, transport logistics, and maritime transport. He received best paper awards from Japan Logistics Society (2014, 2020), Japan Society of Logistics and Shipping Economics (2014) and International Conference on Transport and Logistics (T-LOG) (2018, 2020).

17:00 -17:15 Presentation#7

Title: Institutional erosion in environmental governance of maritime transport
Abstract: This study explores the process of deinstitutionalization of maritime transport governance due to competing institutional logics. The sector continues to operate with a business-as-usual logic while simultaneously paying lip service to a logic of sustainability. The key regulator of the sector, the International Maritime Organization (IMO), attempts to bring in stricter environmental legislation, but the dominant logic will not allow these developments. At the same time, the sustainability logic driven by peripheral actors cannot achieve domination.



Prof. Adolf K.Y. Ng
UIC, China

Adolf K.Y. Ng is Professor of Transport and Supply Chain Management at the Beijing Normal University-Hong Kong Baptist University United International College, China. Also, he is a Senior Fellow at the University of Manitoba (Canada). He got DPhil from the University of Oxford (UK), and worked as a faculty member before at the University of Manitoba (Canada), Hong Kong Polytechnic University (China), and Erasmus University Rotterdam (Netherlands). He excels in the research and teaching of port management, transportation economics, climate change adaptation planning, transportation infrastructure planning and management, institutional and organizational change, global supply chains, and maritime education. His scholarly outputs include seven books, more than 220 publications in leading journals, and other forms of publications.

17:15 -17:30 Presentation#8

Title: Marine Hull Insurance - Pandemic Delay
Abstract: Cover under standard clauses commonly used (subject to English law and practice) Problems introduced by Cover-19 pandemic resulting in additional, often expensive, "delay" related expenses thus affecting the quantum of claim. Introduction of communicable disease exclusion clause



Mr. Raymond Wong
Emeritus Chairman, Institute of Seatransport, China

Mr. Raymond Wong started career in average adjusting in 1966; fully qualified in 1980 by examinations (held in London), becoming the first Chinese Fellow of the British Association of Average Adjusters. A regular lecturer/speaker on general average and maritime claims related topics.

17:30 -18:00 Discussions and Wrap-Up for Day 1

Day 2 (Based on France time (GMT +2))

*summer daylight saving time

Session 3 (Chairman: Dr. Jason Monios, Kedge Business School, France)

13:00 -13:15 Welcome Remarks

13:15 -13:30 Presentation#9

Title: COVID-19: some of the key commercial and other implications for maritime transport from a global perspective
Abstract: Unprecedented disruptions associated with the pandemic and its socioeconomic consequences are giving rise to a plethora of legal issues affecting traders across the globe. In addition to seafarers and crew change issues affecting global supply-chains, extensive disruption and delay due to the pandemic and related response measures have important implications for commercial contracts, the effects of which may lead to business losses and bankruptcies and overwhelm courts and legal systems, with implications for governance and the rule of law. Lessons learnt from COVID-19 also underline the critical importance of risk-assessment, preparedness and resilience and the need to build back better as part of post-pandemic recovery efforts and



Ms. Regina Asariotis
United Nations Conference on Trade and Development (UNCTAD), Switzerland
Regina Asariotis is Chief of the Policy and Legislation Section in the Division on Technology and Logistics of UNCTAD, where her work focuses on transport and trade law and policy (<https://unctad.org/ttl/legal>). Before joining UNCTAD in 2001, Regina was a Senior Lecturer in Maritime Law at the University of Southampton, where she taught for more than 10 years.

She holds a law degree from the University of Augsburg, an LL.M from the University of Southampton and a Dr. jur. from the University of Hamburg and is a Barrister (England & Wales) and Attorney at Law (Greece), as well as Member of the Chartered Institute of Arbitrators (CIArb).

13:30 -13:45 Presentation#10

Title: Crew changes and Covid-19 crisis: lessons from French shipowners
Abstract: The aim of this presentation is to take stock of the main impacts of the Covid-19 on crew changes for the French shipowners (liner, bulk and cruise segments) and to provide a critical analysis of the key adaptation strategies implemented in response to this worldwide pandemic.



Dr. Laurent Fedi
KEDGE Business School, France

Laurent FEDI holds a Juris Doctorate and HDR in Maritime Law. Since 2007, he has been Associate Professor at KEDGE Business School (France). He currently leads different research projects notably on the evolution of maritime law on the Polar Code and risk assessment, Covid-19 and crew changes.

13:45 -14:00 Presentation#11

Title: Impact of COVID-19 on the container shipping industry: prospects for horizontal and vertical integration strategies

Abstract: In this presentation, we analyse the short-term impacts of covid-19 on the container liner shipping and present different scenarios for the medium term. We particularly focus on possible future developments in terms of horizontal integration (M&As and the role of alliances) and vertical integration (logistics, digital transformation, inland transport, etc.) also considering strategic, environmental and legal drivers and impediments.



Prof. Theo Notteboom
Faculty of Business and Economics, University of Antwerp, Belgium

Theo Notteboom is Professor in maritime and port economics and management. He is Chair Professor 'North Sea Port' at the Maritime Institute of Ghent University, Belgium and Professor at Antwerp Maritime Academy and the Faculty of Business and Economics at the University of Antwerp. He also is Visiting Research Professor at Shanghai Maritime University in China.

He is co-director of Porteconomics.eu, member of the Risk and Resilience Committee of International Association of Ports and Harbors (IAPH) and past president of the International Association of Maritime Economists (IAME). He is Associate Editor of Maritime Economics & Logistics, Editor of Journal of Shipping and Trade and a member of the editorial boards of eight other leading academic journals in the field. He published widely in first-tier academic journals and books and was a speaker, moderator or panellist at over 400 international academic and business conferences held across the world. Throughout his career, he received 12 prestigious international awards for his research and achievements in the field.

14:00 -14:15 Presentation#12

Title: Climate risk and resilience analysis in transportation

Abstract: The presentation is to introduce the development of quantitative climate risk analysis based on uncertainty theories (e.g. fuzzy, D-S and Bayesian probabilistic) and their applications to tackle the adaptation and resilience of a few selected uk transport systems, including road, rail, sea/air ports.



Prof. Zaili Yang
Liverpool John Moores University, UK

Zaili Yang is Professor of Maritime Transport at Liverpool John Moores University (LJMU), UK. Prof. Yang's research interests are analysis and modelling of safety, resilience and sustainability of transport networks, particularly maritime and logistics systems. Prof. Yang has received more than £6m external grants (£4m as the PI) from the EU, UK EPSRC and UK DTI

to support his research, including a prestigious ERC consolidator grant. His research findings have been published in more than 270 refereed papers in risk and supply chain areas, including more than 120 SCI/SSCI-cited journal papers.

14:15 -14:30 Presentation#13

Title: Impact of COVID-19 and Suez Canal blockage on forecasting container freight

Abstract: This study aims to determine the impact of COVID-19 and Suez Canal blockage on forecasting container freight rates. We have applied the Prophet forecasting method to incorporate the effect of two significant events on forecasting. In addition to Prophet forecasting, some traditional forecasting techniques are also used for the comparison.



Dr. Naima Saïd
University of Agder, Norway

Naima Saeed is an Associate Professor of Supply Chain Management at the School of Business and Law at the University of Agder. She has a Ph.D. in Logistics from Molde University College (Norway). Her current research is focused on port competition and cooperation, maritime connectivity, and measures to improve ports' efficiency.

14:30-14:45 Break and Photo-Taking

Session 4 (Chairman: Mr. Yufeng Lin, UIC, China)

14:45 -15:00 Presentation#14

Title: The shipping energy transition: how is this impacting on port planning?

Abstract: The presentation will focus on the impact of the planned energy transition (e.g. LNG, hydrogen, renewables) on port investments and planning. The discussion will mainly focus on the effects of the aimed carbon neutrality on the efficient use of port resources and the related capability for ports to compete.



Dr. Alessio Tei
Department of Economics, University of Genoa, Italy

Alessio is Associate Professor in Applied Economics at the University of Genoa. He has been part of several research groups and advisory boards on port economics and maritime transport. He is currently investigating the impact of innovations on the transport industry.

15:00 -15:15 Presentation#15

Title: Climate change adaptation for transport infrastructures

Abstract: The project sets up climate risk and resilience assessment for transport infrastructures to a regional and a global extent. By providing quantitative data for comparing the risk and resilience between different infrastructures, authorities and owners can have a reference to implement climate adaptation planning



Dr. Ching Pong Poo
Liverpool John Moores University, UK

Mark is a researcher interested in analysing transportation systems, and climate change are one of his latest main focus. He cycles to work and loves plant-based food, and therefore he is keen to work more on climate change in the future.

15:15 -15:30 Presentation#16

Title: An integrated insurance underwriting tool for Arctic shipping

Abstract: This presentation covers a novel methodology for predicting the ship-specific actuarially fair insurance premium, which is a function of the type of ships going to the Arctic. The methodology is based on the Bayesian theory. The proposed methodology provides a framework for underwriting insurance for ships going to the Arctic.



Dr. Mawuli Afenyo
University of Manitoba, Canada

Dr. Mawuli Afenyo is researcher and instructor at the University of Manitoba. He has authored/ co-authored 30+ publications comprising papers in top-tier journals, conference proceedings, technical and scientific reports and book chapters. He is also the co-founder of CCAPPTIA an independent consulting and research organization with more than 100+ researchers and practitioners

15:30 -15:45 Presentation#17

Title: Shipping alliance and port development during the COVID-19 pandemic

Abstract: This article aims to analyze the way shipping alliances between container liner companies have impacted the place of ports in Mediterranean and Northern range area during the Covid-19 pandemic. To do so, we firstly evaluate how the cooperation contracts shaping alliances enable their members to benefit from a wide freedom of action, and secondly to look at the evolution of hierarchy of ports between 2018 and 2020.



Dr. Olivier Faury
EM Normandie, France

Olivier FAURY is an Associate Professor of Supply Chain Management and Logistics. He joined EM Normandie in 2016. He has a PhD in maritime economics from KEDGE Business School, Marseille, awarded in 2016. His thesis is an economic analysis of the Northern Sea Route. His research interests are how risk management, port development and the legal framework affect the attractiveness of Arctic shipping lanes for cruise tourism, container traffic and bulk shipping. Prior to his doctorate, he worked for 10 years for various freight companies in France and Morocco in sales and management roles.

15:45 -16:00 Presentation#18

Title: Impact of covid19 on University Campuses transportation choices: behaviors, attitudes and solutions for an urban resilience approach

Abstract: This article aims to analyze the way shipping alliances between container liner companies have impacted the place of ports in Mediterranean and Northern range area during the Covid-19 pandemic. To do so, we firstly evaluate how the cooperation contracts shaping alliances enable their members to benefit from a wide freedom of action, and secondly to look at the evolution of hierarchy of ports between 2018 and 2020.



Prof. Andrea Simone
University of Bologna, Italy

Prof. Andrea Simone (M), Full Professor, has completed his Honours degree in Civil Engineering Sec. Transport at the University of Bologna in July, 1995 where he also obtained his PhD in Transportation Engineering in April 1999. From July 2000 to December 2004 he has been Researcher at the University of Bologna. In 2005 he became Associate Professor and finally from May 2020 he is full Professor of "Roads, Railways and Airport Engineering" at the University of Bologna. From 2003 to 2007 he has been Professor of Roads, Railways and Airports Construction at the University of Bologna. Since 2010 he is Professor of Uncertainty and Risk in Transportation Systems at the University of Bologna (Master Degree 2 years course – Civil Engineering in English). He has served on European and international (AIPCR-PIARC) technical committees. His main research areas are Road pavement materials, maintenance and design of pavement infrastructures, Road Safety Analysis, road design and human factor interaction.

16:00-16:30 Discussions and Wrap-Up for Day 2

Day 3 (based on Manitoba (MB), Canada time (GMT -5))

*summer daylight saving time

Session 5 (Chairman: Dr. Changmin Jiang, University of Manitoba,

09:00 -09:15 Welcome Remarks

09:15 -09:30 Presentation#19

Title: Against the Pandemic: Resilience and Adaptation of Shipping and Ports

Abstract: The presentation discusses the ways that the COVID-19 pandemic has tested maritime shipping, ports and related supply chains, exploring the trends observed in different markets (i.e. container, dry and wet bulk, passenger etc.), and the efforts of ports and related stakeholders to enhance the resilience and advance the adaptability of maritime supply chains in order to secure the continuation of operations.



Prof. Thanos Pallis
President, International Association of Maritime Economists (IAME)
Professor, University of the Aegean, Greece.

Thanos Pallis is the President of International Association of Maritime Economists (IAME) & Professor in Port Economics & Policy, at the University of the Aegean, Greece. The co-director of PortEconomics, he is currently the chief transport economist of the UN program on "COVID-19 Implication

on Transport/Connectivity and Trade" and active at the IAPH Risk and Resilience Committee for which he co-authors the world port barometer reports. He co-authors the book Port Economics, Management and Policy to be published by Routledge in 2021.

09:30 -09:45 Presentation#20

Title: Port Development in the context of the Arctic Shipping Routes

Abstract: The documented previous research indicate that with the continuation of easier access to natural resources in the Arctic, as well as, safer access to shorter shipping routes, the Arctic Region will continue to see exponential growth of cargo transportation, and contingencies for this growth should be made accordingly. This research is focused on examining the conditions related to port development and physical infrastructure in the Arctic shipping routes.



Dr. Cassia Bomer Galvao
Texas A&M University, USA

Dr. Cassia B. Galvao is an Economist and holds Ph.D. in Social Sciences, Catholic University of Sao Paulo. Her dissertation was about port policies and development in the context of economic development. Private sector (10+ years) experience in Marketing & Sales Division of multiple international container liners and freight forwarders. She is a Fulbright Alumni and was

09:45 -10:00 Presentation#21

Title: Implications of Arctic shipping emissions for marine environment

Abstract: To investigate the distribution and behaviour of ocean vessels in the Arctic region and determine the impacts of their emissions, we examine vessel characteristics in conjunction with a series of Automated Identification System (AIS) data during 2012-2016. These datasets, combined with a bottom-up model for estimating pollution emissions, enable us to analyse the level of pollution generated by vessels in the Arctic region.



Prof. Yingen Ge
Shanghai Maritime University, China

Prof. Ying-En Ge is currently Professor and Dean of the College of Transport and Communications of Shanghai Maritime University. Before moving back to China in 2010, he worked in the US and UK for 10+ years. His primary academic interests include transportation modelling and analysis, transport and environment, and operations and management of ports and shipping.

His research has been successfully funded by the UK Engineering and Physical Sciences Research Council, National Natural Science Foundation of China, Lloyd's Register Foundation, etc. He also serves as associate editor for international leading journals of Transportation Research Part D: Transport and Environment, Maritime Policy & Management, etc. He is the chairperson of the Waterborne Transport division of World Transport Convention since 2017.

10:00 -10:15 Presentation#22

Title: Principal-agent problems in decarbonizing container shipping: A panel data analysis

Abstract: The container shipping industry's charter market exhibits a particular type of principal-agent problems deriving from information asymmetries between charterer and owner. We investigate agency theory in transportation science by analyzing the impact of split incentives and information asymmetries on carbon emissions. We show that in the case of container shipping, chartering results in about 8% higher carbon emissions, benchmarked against owner-operated vessels, which can be explained as a consequence of principal-agent problems. We also discuss operational cost increases deriving from levying a carbon price in accordance with the Paris Agreement targets. We present guidance to respective carbon policies and point to incentives to overcome underinvestment in green technologies.



Prof. Michele Acciaro
Kühne Logistics University, Germany)

Michele Acciaro is the Director of the Hapag-Lloyd Center for Shipping and Global Logistics (CSGL) at the Kühne Logistics University (KLU). His main research interests are sustainability, global logistics, maritime business, energy transition and low carbon transport.

10:15 -10:30 Presentation#23

Title: Future Arctic shipping, HFO use and Climate Change
Abstract: Shipping fuels underwent very little change for decades until 2020 when the International Maritime Organization (IMO) limited the sulfur content of fuels to 0.5% globally. The IMO also developed a draft regulation in 2020 that would phase out highly viscous Heavy Fuel Oils (HFOs) in the Arctic region by 2029. In 2021, the IMO adopted regulations that aim to improve the efficiency and carbon intensity of ships by at least 2% per year to address their longer term climate change goals of 40% reduction in carbon intensity by 2030 and 50% overall reduction in GHG emissions by 2050. This presentation explores the new landscape of vessels and fuels used in the Arctic, focusing on their impacts to the environment.



Dr. Steven Messner
e360, USA

Steve Messner has worked on numerous climate change related projects over the past 20 years including adaptation planning at Ports, emission reduction plans for utilities, refineries, municipalities, and ports, and sustainability planning for financial institutions. Steve has authored publications on regional adaptation planning, adaptation planning at Ports, and Arctic shipping emissions. He is currently working on a project for the California Air Resources Board (CARB) which is exploring the links between CARB's climate policies and innovation occurring as a result of their policies. Prior to his work on climate change issues, Steve was in environmental management at oil & gas companies for 10 years.

10:30-10:45 Break and Photo-Taking

Session 6 (Chairman: Dr. Mawuli Afenyo, University of Manitoba, Canada)

10:45 -11:00 Presentation#24

Title: Operational Risk Management Model for Marine Traffic in Arctic
Abstract: This presentation will share details on the development and use of advanced dynamic risk model to assess and manage risk in challenging conditions, i.e. transportation through Arctic waters. A novel concept of an intermediate offshore resource centre (ORC) will also be discussed. The ORC goals are to provide an intermediate helicopter landing station and a forward staging area for emergency response. Among many advantages, ORC mitigates the logistical risk associated with the extended distance from shore support by reducing the response time in the case of accidents.



Prof. Faisal Khan
Memorial University of Newfoundland, Canada

Dr. Faisal Khan is a Professor and the Canada Research Chair Tier I of Offshore Safety and Risk Engineering. He is also a member of Oil and Gas Engineering Board of Studies at Faculty of Engineering and Applied Science, Memorial University of Newfoundland, Canada and a visiting professor at Australian Maritime College, University of Tasmania, Australia. In 2000, He founded the Safety and Risk Engineering Group (SREG) at Memorial University of Newfoundland which is now known as the Centre for Risk, Integrity, and Risk Engineering (C-RISE) with 40+ team members including academics, research engineers, and graduate students who are doing research on a wide range of theoretical and applied research activities mainly related to process safety and asset integrity management.

11:00 -11:15 Presentation#25

Title: Reflecting on the trade of low value goods - a potential of de-growth?
Abstract: This work is intended to contribute to the critical discussion of the shipping sector role in global trade and supply chains and aims to highlight possible scenarios that are juxtaposed to the traditional growth and positivist projections. Our research analyses, which types of trade might not be essential and could/should/will be re-shored/stopped in future. Transporting goods across the planet as part of a system that creates development at the expense of the health of ourselves and our ecosystems is a paradox. Trade in unnecessary items that grew as a result of cheap (clearly under-priced because not including environmental and social costs) transport costs should be questioned.



Prof. Gordon Wilmsmeier
Universidad de Los Andes, Colombia

Gordon Wilmsmeier holds the Kühne Professorial Chair in Logistics at the Universidad de los Andes in Bogota, Colombia. From 2011 to 2017, he worked as Economic Affairs Officer in the Infrastructure Services Unit at the United Nations Economic Commission for Latin America and the Caribbean (UN-ECLAC). Previously he worked at Edinburgh Napier University's Transport Research Institute (TRI), and as consultant for UN-ECLAC, UNCTAD, UN-OHRLLS, the World Bank, Adelphi Research, JICA, IDB, CAF, OAS. He is an internationally recognized expert in the geography of maritime transport geography and economics, port economics and inland shipping issues with particular interests in shipping networks, governance competition, transport costs, sustainability and energy efficiency.

11:15 -11:30 Presentation#26

Title: A Resilience-based Decision-making Framework for Complex Systems: Case of the Pandemic Outbreak in the Port Industry
Abstract: Ports should maintain functionality at a certain level following any disruptions through their resilience-building capacities. To understand the best practices in restoring the capacity of ports in the face of a pandemic outbreak, including COVID-19, a generic resilience assessment model is developed in this study. Developed based on the system-thinking approach benefiting from the Bayesian Belief Network, the quantified model is investigated through forward-propagation and sensitivity analysis and reveals that the investigated port should focus on connectivity, training, and technology to enhance its system's resilience.



Dr. Roozbeh Panahi
Zukalor, Canada

Roozbeh Panahi is a risk management specialist with 10+ years of experience in multi-disciplinary plans and projects in collaboration with a broad range of stakeholders, especially in the transportation and maritime sector. In recent years, he has focused on quantitative and qualitative assessment resilience and vulnerability of complex processes and systems in the face of hazard and operational risks including climate change. He has disseminated risk management knowledge through scholarly and professional outlets in close collaboration with practitioners and researchers. He is a founding member of the International Forum on Climate Change Adaptation Planning for Port, Transportation and the Arctic (CCAPPTIA) and an adviser to the Climate Bond Initiative (CBI).

11:30 -11:45

Presentation#27

Title: Shoreline-Change Prediction using Bayesian Network

Abstract: Coastal communities have been impacted by sea-level rise. This phenomenon calls for the appropriate tools to model and evaluate likely impacts for decision making. This study presents a Bayesian Network to forecast rate of change in shorelines in parts of Ghana using the Coastal Vulnerability Index. The work is key to decision making on the risk of climate change along the shorelines of Ghana and other West African Countries.



Mr. Twum Antwi-Agyakwa
University of Cape Coast, Ghana
Kwasi Twum Antwi-Agyakwa, a PhD Student (Integrated Coastal Zone Management) at the Africa Centre of Excellence in Coastal Resilience (ACECoR), University of Cape Coast, Cape Coast. His research interest is GIS and Remote Sensing applications in Environmental Change. Currently working to develop a decision support system to assess coastal vulnerability to aid in building resilience.

11:45-12:00

Discussions and Wrap-Up for Day 3

Organizing Committee

Adolf K.Y. Ng

St. John's College, University of Manitoba, Canada;
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Internaional College, China

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