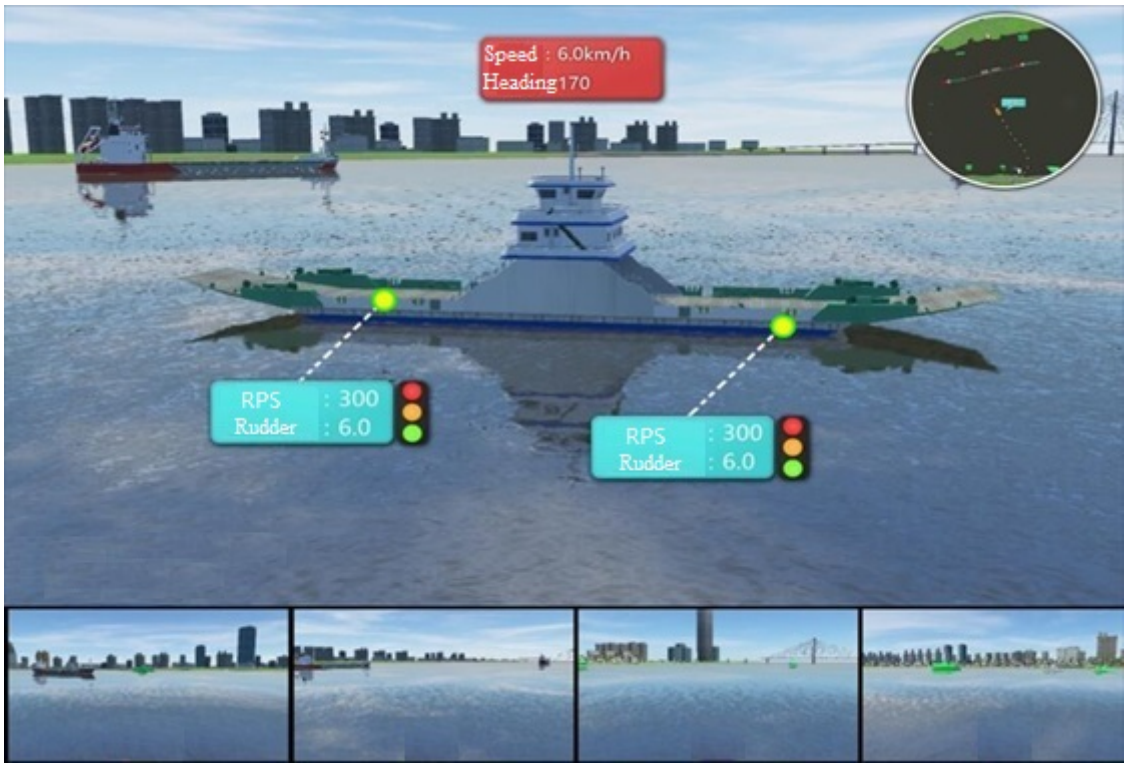
武漢理工大學 Wuhan University of Technology

International Workshop on Maritime Safety and Smart Shipping (MSSS)

Wuhan, China

September 24-26, 2017

WORKSHOP PROGRAM



Intelligent Transportation Systems Research Center,
Wuhan University of Technology，China

National Engineering Research Center for Water Transport Safety（WTS），MoST, China

Base for International Science & Technology Cooperation on Smart Shipping and Maritime Safety, MoST, China

Sponsors

Wuhan University of Technology, China

Chalmers University of Technology, Sweden

Liverpool John Moores University, UK

Co-sponsors

Science and Technology Department of Hubei Province, China

EU H2020 Research and Innovation Framework Program

National Natural Science Foundation of China

The Swedish Foundation for International Cooperation in Research and Higher Education (STINT, Sweden)

Organizers

ITSC 智能交通系统研究中心

国家水运安全工程技术研究中心
The National Water Transportation Safety Engineering Technology Research Center

智能航运与海事安全国际科技合作基地
Base for International Science & Technology Cooperation on Smart Shipping and Maritime Safety

Supported by

- Aalto University, Finland.
- Leibniz Universität Hannover, Germany.
- Mahidol University, Thailand.
- Norwegian University of Science and Technology, Norway.
- State Marine Technical University of St. Petersburg, Russia.
- Universiti Kebangsaan Malaysia, Malaysia.
- Universiti Teknologi Malaysia, Malaysia.
- University of California, Los Angeles, USA.
- University of Lisbon, Portugal.
- University of Plymouth, UK.

ORGANIZING COMMITTEE

Chairman:

Xinping Yan, Chair Professor, Intelligent Transport System Research Center, Wuhan University of Technology, China； Director of National Engineering Research Center for Water Transport Safety（WTS）, MoST, China.

Co-Chairman:

Jin Wang, Professor, Director of LOOM Research Institute, Liverpool John Moores University, UK.

Wengang Mao, Associate Professor, Chalmers University of Technology, Sweden.

Di Zhang, Associate Professor, Vice Director of Intelligent Transport System Research Center, Wuhan University of Technology, China.

Secretary:

Jialun Liu, Assistant Professor, Intelligent Transport System Research Center, Wuhan University of Technology, China.

SCIENTIFIC COMMITTEE

Honorary Chairman:

William Geraint Price, FRS, FREng, Professor of University of Southampton, UK, Strategic Scientist of Wuhan University of Technology, China

Chairman:

Ali Mosleh, NAE, Professor of University of California, Los Angeles， USA.

Co-Chairman:

Carlos Guedes Soares, Professor, University of Lisbon, Portugal.
Stein Haugen, Professor, Norwegian University of Science and Technology, Norway.

Members:

Ab Saman Abd Kader, Professor, Universiti Teknologi Malaysia, Malaysia.
Annie Bekker, Associate Professor, Stellenbosch University, UK.
Di Zhang, Associate Professor, Wuhan University of Technology, China
Hao Hu, Professor, Shanghai Jiao Tong University, China.
Igor Rychlik, Professor, Chalmers University of Technology, Sweden.
Jakub Montewka, Associate Professor, Gdynia Maritime University, Poland.
Krzysztof Podgórski, Professor, Lund University, Sweden.
Leif Eriksson, Professor, Chalmers University of Technology, Sweden.
Pentti Kujala, Professor, Aalto University, Finland.
Shenping Hu, Professor, Shanghai Maritime University, China.
Vadim Goncharov, Professor, State Marine Technical University of St. Petersburg, Russia.
Wonsiri Punura, Professor, Mahidol University, Thailand.
Xiao Zhang, Professor, Qingdao Ocean Shipping Mariners College, China.
Yuanqiao Wen, Professor, Wuhan University of Technology, China.
Zhijun Li, Professor, Dalian University of Technology, China.
Yingjun Zhang, Professor, Dalian Maritime University, China.
Zheping Shao, Professor, Ji Mei University, China.

Contact:

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ITS Research Center, Wuhan University of Technology
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DETAILED PROGRAM of MSSS 2017

Part One: Student Seminar on Maritime Safety and Smart Shipping

Time: 08:30-15:20, Sunday, September 24 Location: Chutian International Hotel Wuhan
Teaching and key concepts ● Risk analysis and management ● Ice condition information and navigation ● Intelligent ship technologies ● Maritime risk modules
Session One: Risk analysis and management **Time: 08:30-09:50, keynote speaker: Prof. Jin Wang** Title: Maritime risk assessment and application of fault tree analysis
9:50-10:00 Break
Session Two: Maritime risk modules **Time: 10:00-11:20, keynote speaker: Prof. Carlos Guedes Soares** Title: Evaluation of near-collisions in an estuary using a marine traffic simulation model
11:20-11:30 Break
Session Three: Ice navigation safety **Time: 11:30-12:50, keynote speaker: Dr. Floris Goerlandt** Title: Winter navigation risk management in the Northern Baltic Sea
12:50-14:00 Lunch
Session Four: Intelligent ship technologies **Time: 14:00-15:20, keynote speaker: Dr. Feng Ma** Title: TBD

REGISTRATION of MSSS 2017

Time: 15:00-20:00, Sunday, September 24

Location: Lobby, Chutian International Hotel Wuhan

DETAILED PROGRAM of MSSS 2017

Part Two: Round-table Conference on Intelligent Transportation

Frist half of the round-table conference on "Intelligent Transportation" **Time: 9:00-10:20, Chairman: Prof. Xinping Yan**
10:20-10:40 Coffee Break
Second half of the round-table conference on "Intelligent Transportation" **Time: 10:40-12:00, Chairman: Prof. Xinping Yan**

DETAILED PROGRAM of MSSS 2017

Part Three: Keynote speeches and invited presentations

Day 1: 13:30-17:25, Monday, September 25
Session One: Polar Shipping & Search and Rescue in Ice
Time: 13:30-14:00, keynote speaker: Prof. Igor Rychlik
Title: Spatio-temporal modelling of wind variation in Arctic region
Time: 14:00-14:25, invited speaker: Prof. Vadim Goncharov
Title: TBD
Time: 14:25-14:50, invited speaker: Dr. Floris Goerlandt
Title: Tools for ecosystem service-based operational maritime shipping oil spill risk management
Time: 14:50-15:15, invited speaker: TBD
Title: TBD
15:15-15:40 Coffee Break
Session Two: Maritime Risk Modules & Human Behaviors
Time: 15:40-16:10, keynote speaker: Prof. Ali Mosleh
Title: TBD
Time: 16:10-16:35, invited speaker: TBD
Title: TBD
Time: 16:35-17:00, invited speaker: TBD
Title: TBD
Time: 17:00-17:25, invited speaker: Dr. Jinfen Zhang
Tilte: Modeling and simulation of trajectory and destination prediction for objects drifting in inland waterways
Day 2: 9:00-17:25, Tuesday, September 26
Session Three: Ice Condition Information and Navigation
Time: 9:00-9:30, keynote speaker: Prof. Carlos Guedes Soares
Title: TBD
Time: 9:30-9:55, invited speaker: Dr. Yufang Ye
Title: Sea ice monitoring with microwave satellite observations

Time: 9:55-10:20, invited speaker: Dr. Jakub Montewka

Title: TBD

10:20-10:35 Coffee Break

Session Four: Power Plant Reliability & Oil Spill Prevention and Combating

Time: 10:35-11:05, keynote speaker: Prof. Stein Haugen

Title: Trends and needs for research in maritime risk

Time: 11:05-11:30, invited speaker: TBD

Title: TBD

Time: 11:30-11:55, invited speaker: TBD

Title: TBD

11:55-13:30 Lunch Break

Session Five: Intelligent Ship Technologies

Time: 13:30-14:00, keynote speaker, Prof. Xinping Yan

Topic: Research on Concept of Navigation Brain System and Its Developments

Time: 14:00-14:30, keynote speaker: Wengang Mao

Title: Big data based performance modelling for safe and energy efficient shipping

Time: 14:30-14:55, invited speaker: Helong Wang

Title: Impact of route optimization algorithms for intelligent shipping

Time: 14:55-15:20, invited speaker: TBD

Title: TBD

15:20-15:45 Coffee Break

Session Six: Risk Analysis and Management

Time: 15:45-16:16, keynote speaker: Prof. Jin Wang

Title: TBD

Time: 16:15-16:40, invited speaker: TBD

Title: TBD

Time: 16:40-17:05, invited speaker: TBD

Title: TBD

Time: 17:05-17:30, invited speaker: TBD

Title: TBD

Keynote Speaker

Presentation Topic:
Spatio-temporal modelling of wind variation in Arctic region

Prof. Igor Rychlik
PH. D.
rychlik@chalmers.se

Affiliation:
Chalmers University of Technology, Sweden

Biography:

Dr. Igor Rychlik is a professor in Mathematical Statistics at Chalmers University of Technology, Sweden. He received a BSc in Mathematics from Umeå University in 1978, a PhD in Mathematical Statistics from Lund University, Sweden in 1986. He was promoted to the professor in mathematical statistics at Lund University in 1999. After 8 years of research and teaching duties at Lund University, he moved to Chalmers University of Technology as a professor in applied statistics in 2007. He has been working extensively to apply the statistical knowledge to solve practical engineering problems. Some major research areas are: Spatial statistics, stochastic geometry and imaging; Reliability of engineering systems. His primary research interests involve engineering applications of the theory of stochastic processes, especially in safety analysis of structures interacting with the environment, for example through wind pressure, ocean waves or temperature variations. Physical problems often leads to statistical questions that can be extracted and studied independently. His theoretical studies are centered on the description of local properties (wave characteristics) of smooth random processes and fields. He has won several research awards, such as the best paper award from Journal of Engineering for Maritime Environment, International conference on International Society of Offshore and Polar Engineers. He was also severing as a member of environment committee in the International Ship and offshore Structures Congress. He has published more than 140 scientific journal papers, of which the outstanding research on mathematical definition of rain flow counting for engineering structural fatigue estimation got 373 citations.

Keynote Speaker

Presentation Topic:
TBD

Prof. Ali Mosleh
PH. D.
mosleh@ucla.edu

Affiliation:
University of California, Los Angeles, USA

Biography:

Dr. Ali Mosleh is Distinguished Professor and holder of the Evelyn Knight Chair in Engineering at the University of California in Los Angeles. Prior to that he was the Nicole J. Kim Eminent Professor of Engineering and Director of the Center for Risk and Reliability at the University of Maryland. He was elected to the US National Academy of Engineering in 2010, and is a Fellow of the Society for Risk Analysis, and the American Nuclear Society, recipient of several scientific achievement awards, and consultant and technical advisor to numerous national and international organizations, including appointment by President George W. Bush to the U.S. Nuclear Waste Technical Review Board, a position in which he continued to serve in the administration of President Obama. He conducts research on methods for probabilistic risk analysis and reliability of complex systems and has made many contributions in diverse fields of theory and application. These include risk and reliability of hybrid systems of hardware, human and software; complex systems prognostics and health monitoring with limited information; dynamic systems reliability; common cause failure analysis; accident sequence precursor methodology; Bayesian methods of inference with uncertain evidence; reliability growth prediction; methods for software reliability and cyber security; cognitive models for human performance in complex systems; and models of the influence of organizational factors on system reliability and safety. On these topics he holds several patents, and has edited, authored or co-authored over 450 publications including books, guidebooks, and technical papers. In 2013, he received the American Nuclear Society Tommy Thompson Award for his numerous contributions to improvement of reactor safety. Dr. Mosleh has led many major studies on risk and safety of complex systems such as space missions, nuclear power plants, commercial aviation, communication networks, and healthcare systems. He has chaired or organized numerous international technical conferences and is on the editorial board of several technical journals.

Invited Speaker

Presentation Topic:
Modeling and simulation of trajectory and destination prediction for objects drifting in inland waterways

Dr. Jinfen Zhang
PH. D.
jinfen.zhang@whut.edu.cn

Affiliation:
National Engineering Research Centre for Water Transport Safety (WTSC), Wuhan University of Technology, P. R. China.

Biography:
Dr. Jinfen Zhang is an association professor at the institute of Risk and Emergency Management in National Engineering Research Center for Water Transport Safety (WTS). He received the Master and PhD degree in 2010 and 2013, respectively. His researches mainly focus on risk modelling and risk assessment in maritime transportation system, anti-collision decision making, maritime search and rescue. He had one-year research experience at the department of Production and Quality Engineering in Norwegian University of Science and Technology (NTNU) as a visiting scholar and two-year research experience as a postdoc at the Centre for Marine Technology and Ocean Engineering (CENTEC) from University of Lisbon. He has published about 40 academic papers, including over 10 in international journals and 15 in international conferences. He received “Excellent PhD Candidate” in 2013. He received the “Excellent PhD Degree Thesis” of Hubei Province in 2015. He received “Chutian Excellent Young Scholar” in 2017.

Modeling and simulation of trajectory and destination prediction for objects drifting in inland waterways

Abstract: The frequency of inland water traffic accidents is still high. And it is crucial to improve the efficiency of search and rescue (SAR) when an object is missing in inland waterways. Based on the Leeway model, this presentation will introduce how to establish the forecasting model of inland river search and rescue target based on the characteristics of inland waterway current. First, the inhomogeneous current field of an inland waterway is constructed according to the local spatial correlations. Second, by taking into consideration on the uncertainties from the initial position of the object, the direction of wind- and current-induced drift and the characteristics of the search and rescue target, the evolutions of the drifting trajectory are obtained. Finally, based on the

object's drifting trajectory, the probability distribution of the object's destination is calculated statistically. The results are meaningful for finding the missing object in inland waterways quickly and effectively in SAR operations.

Keynote Speaker

Presentation Topic:
TBD

Prof. Carlos Guedes Soares
PH. D.
c.guedes.soares@centec.tecnico.ulisboa.pt

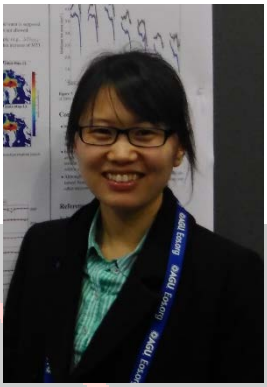
Affiliation:
Centre for Marine Technology and Ocean Engineering,
Lisbon University, Portugal

Biography:

Carlos Guedes Soares (Coordinator of PLENOSE CENTEC unit) is Professor and the President of the Centre for Marine Technology and Engineering at IST (CENTEC). He had his post-graduate education at the Massachusetts Institute of Technology and the Norwegian Institute of Technology. He has been involved in about 60 European projects, coordinating 6 of them, and has also co-ordinated about 15 national projects. He has published about 400 papers in international journals, and 600 papers in books and conferences, and is a member of several international organizations and of the Editorial Board of several scientific journals. He has coordinated projects such as WAVEMOD, HIPOCAS, FREAK WAVES, SHIPREL, MARSTRUCT and SAFERELNET dealing with the design and safety of floating structures in extreme conditions. It was also technical coordinator of projects like REBASDO, SAFEOFFLOAD, WAVELOADS, HANDLING WAVES and EXTREME SEAS.

Keynote Speaker

Dr. Yufang Ye
yufang@chalmers.se



Presentation Topic:
Sea ice monitoring with microwave satellite observations

Biography:
Dr. Yufang Ye is a post-doctoral researcher in Department of Space, Earth and Environment at Chalmers University of Technology, Sweden. She received her Bachelor degree in Physics and Master degree in Remote Sensing in Beijing Normal University, China, in 2008 and 2011, respectively. In December 2011, she started her Ph.D. in Physics at Institute of Environmental Physics, University of Bremen, Germany. She finished her Ph.D. study on Microwave Remote Sensing of Sea Ice in July 2016. After that, she worked as a postdoc at University of Bremen for one year and in June 2016 started the postdoc position at Chalmers. Her main research interests are monitoring changes of sea ice (concentration, types and dynamics) with active and passive microwave remote sensing data, and understanding the mechanisms behind. She has been involved in projects of sea ice navigation and remote sensing of sea ice with financial support from EU, ESA, SNSB, DFG, etc.

Sea ice monitoring with microwave satellite observations

Sea ice is a sensitive climate indicator, and plays an important role in exploration and exploitation of marine resources. In the past four decades, sea ice has been monitored with microwave remote sensing sensors, e.g., radiometers, scatterometers and radar. They are independent of sun light and can penetrate clouds, making it possible to monitor sea ice in polar regions. Microwave radiometer and scatterometer data can be used to estimate sea ice concentration (therefore area and extent), types and large-scale ice drift, while radar and laser altimetry are able to measure sea ice thickness. The sea ice information derived from satellite data makes shipping much safer with near-real-time monitoring and forecasting.

Keynote Speaker

Presentation Topic:
Trends and needs for research in maritime risk

Prof. Stein Haugen
PH. D.
stein.haugen@ntnu.no

Affiliation:
Norwegian University of Science and Technology, Norwey

Biography:

Professor Haugen holds a Masters Degree in Marine Structure and a PhD in Risk Analysis of ship collisions from the Norwegian University of Science and Technology (NTNU). He has worked about 25 years as a consultant in the company Safetec, mainly to the oil and gas industry. He established an office in Aberdeen for Safetec and was managing director of the company for a total of about 7 years, until 2000. As a consultant, he was working with risk management in general and in particular risk analysis and the influence of human and organizational factors on major accident risk. In 2000, he joined NTNU as an adjunct professor and in 2010 he became a full professor. From 2010 to 2014 he worked at the Department of Production and Quality Engineering before joining the Department of Marine Technology in 2015. His main research interests are related to major accident risk, including risk analysis, safety culture, maintenance influence on risk and operational risk analysis. He is currently heading a research project called MIRMAP, aimed at developing new methods for operational risk analysis.

Trends and needs for research in maritime risk

This presentation describes the scope of the recently created Maritime Accident Risk Network (MARNet) that aims at providing the maritime industry with new knowledge on prevention, control and mitigation of serious accidents. The presentation starts by presenting the objectives, focus areas and research topics addressed by the network MARNet. Then, the present position, trends and research needs in maritime risk are discussed. The emphasis is on the main focus areas of the Maritime Accident Risk Network, which include: i) Learning from accidents, ii) Understanding and communicating the risk picture, iii) Effective response to accidents and iv) Risk management. The three first research topics are all part of a general risk management process, but address different aspects of the process, while the last one aims to provide the framework that integrates the other focus areas. Although this presents an overview

on the topic of maritime risk, the contents are mainly focused on the knowledge and contribution of the authors to the developments in this area and, therefore, it does not claim to be an extensive general bibliographic review of the subject matter.

Keynote Speaker

Presentation Topic:
Research on Concept of Navigation Brain System and Its Developments

Prof. Xinping Yan
PH. D.
xpyan@whut.edu.cn

Affiliation:
Director, National Engineering Research Center for Water Transport Safety, ITS Research Center, Wuhan University of Technology

Biography:

Dr Xinping Yan is Chair Professor and Director of National Engineering Research Center for Water Transport Safety（WTS, MoST ）and Base for International Science & Technology Cooperation on Smart Shipping and Maritime Safety, (MoST),Wuhan University of Technology, China. He received his BSc in Marine Machinery Design and Manufacture from Wuhan University of Water Transportation Engineering, China in 1982, MSc in Marine Engineering from the same university in 1987, PhD in Mechanical Engineering from Xi'an Jiaotong University, China in 1997. His research interests include marine system design and control, condition monitoring and fault diagnosis, tribology and its industrial application, renewable energy for ships and intelligent transport system etc. He is FIMarEST, the member of ISO/TC108/SC5 Committee, Vice Chairman of China Association of Plant Engineering and Chairman of Organizing Committee of The 1st , The 2nd and The 3rd International Conference on Transportation Information and Safety(2011,2013 and 2015), Wuhan, China, and the editorial member of Journal of Maritime Environment (U.K.). He has published 10 monographs and textbooks, over 500 refereed journal and conference publications (98 SCI-cited journal papers since 2005), 15 keynote speeches in international and national conferences, Second Prize for Technological Invention Award of China (2012) and Second Prize for Science and Technology Progress Award of China (2016).

Keynote Speaker

Presentation Topic:
TBD

Prof. Jin Wang
PH. D.
j.wang@ljmu.ac.uk

Affiliation:
Liverpool John Moores University, UK

Biography:

Prof. Jin Wang is Associate Dean (Research and Scholarship) of the Faculty of Engineering and Technology at Liverpool John Moores University (LJMU), UK. He is also Director of Liverpool Logistics, Offshore and Marine (LOOM) Research Institute at LJMU. He received a BSc in Marine Automation from Dalian Maritime University in 1983, an MSc in Marine Engineering and a PhD in Safety Engineering from Newcastle University, UK in 1989 and 1994, respectively. Following just less than 5 years' research as a Research Associate at Newcastle University, he joined LJMU as a lecturer in 1995, and was promoted as Reader in Marine Engineering and Professor of Marine Technology in 1999 and 2002, respectively. He has been involved in safety and reliability research of large engineering systems with significant financial support from the UK research councils, EU, etc. He has successfully completed supervision of more than 50 doctoral/postdoctoral researchers. His research areas are in risk-based design and operation of large maritime engineering systems such as ships, offshore installations and port terminals. Prof. Wang's publications include more than 100 SCI cited journal papers (h-index 27, more than 2,000 citations in Web of Knowledge/ Science). He has won several research awards including two Denny Medals from the Institute of Marine Engineering, Science and Technology (IMarEST). Prof. Wang was a sub-panel member (sub-panel 12: Aeronautical, Mechanical, Chemical and Manufacturing Engineering) in the Research Excellence Framework 2014 for assessing the quality of research in the UK's higher education institutions.

Invited Speaker

Presentation Topic:
TBD

Prof. Vadim Goncharov
PH. D.
vkgonch@mail.ru

Affiliation:
State Marine Technical University of Saint Petersburg, Russia

Biography:

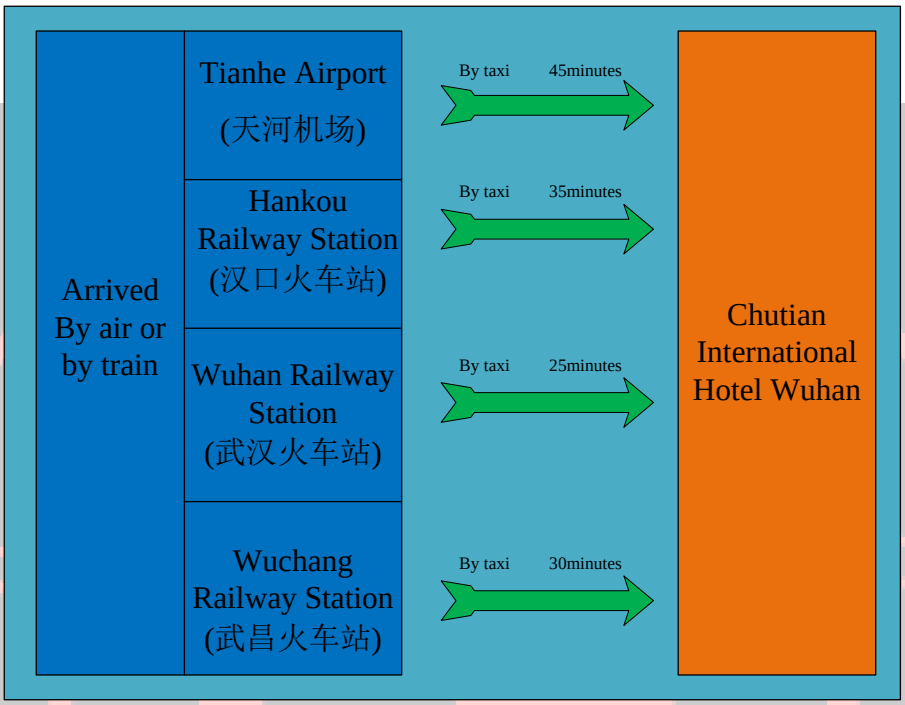
Vadim Goncharov is a professor of the department “Ocean techniques and Marine Technologies” at the State Marine Technical University of Saint Petersburg in Russia. He has about 50 years of research experience related to Ocean logy and marine ecology for shipbuilding and operation of vessels. He got the degree of doctor of technology in Krylov Shipbuilding Research Institute on 1988. The main research interests have been devoted to the risk analysis of marine operations in ice channel, and his research focus on some fundamental issues including extracting and modeling the quantitative feature of ship behavior, ice load - ship structure coupling modeling, Bubbles and Drops Dynamics, Ice Mechanics, Safety of Winter Navigation, Environment Effect of Oil Production and Transportation, Environment Risk Assessment., and risk control options in polar waters within limited resources. The results are estimated to provide with a systematic theory and technical in reducing and preventing accident in polar waters. He has published more than 50 EI/SCI articles on the Arctic research.

GENERAL INFORMATION

1. Workshop location

Address:181#, Donghu Road, Wuchang District, Wuhan, P.R. China

2. From airport or railway station to Chutian International Hotel Wuhan.



3. Location and view of the Chutian International Hotel Wuhan.

Chutian International Hotel Wuhan,楚天国际大酒店

Address:181#, Eastlake Road, Wuchang District, Wuhan, P.R. China

地址 :中国武汉市武昌区东湖路 181 号

Tel :027-86628888

Location of Chutian International Hotel Wuhan


View of Chutian International Hotel Wuhan

4. Useful telephone numbers

Police: 110
Fire Emergency: 119
Hospital: 120

5. Emergency contacts

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