

# 25<sup>th</sup> Air Transport Research Society

## World Conference 2022

-- Programme



**Venue: Antwerp Management School**  
Boogkeers 5, 2000 Antwerpen, Belgium



Universiteit  
Antwerpen



Antwerp  
Management  
School

# Setting up Whova for the 25<sup>th</sup> Air Transport Research Society World Conference

## DOWNLOAD WHOVA APP

Whova is both a web and mobile app. The mobile and web app both have the same features. You can be logged into both the web and mobile app at the same time.



Download the Whova Mobile app for:

- Appstore for iPhone
- PlayStore for Android

\* Please login Whova with the **same email address used for ATRS registration!**

The conference is hosted in hybrid mode. Both online attendees as on campus attendees are invited to make use of the Whova platform to enhance their conference experience. Through the Whova platform, you can compose your own personal conference agenda, interact with other conference participants and attend all plenary and paper sessions live via a Zoom interface. You can rewatch any recorded sessions you might have missed.

## PROGRAMME OVERVIEW

All times in CEST (UTC+2)

### WEDNESDAY, 24 AUGUST – Meetings and Reception

09:00 – 15:00	Meetings (by invitation only)
14:00 – 18:00	Ph.D. Student and Junior Faculty Workshop
15:30 – 18:00	Conference Registration
18:00 – 20:30	Welcome Reception

### THURSDAY, 25 AUGUST – Plenary Session and Paper Sessions

08:30 – 17:30	Conference Registration
09:00 – 09:15	Welcome Address and Explanation Whova
09:15 – 09:45	Academic Keynote Speech
09:45 – 10:30	Industry Keynote Speeches
10:30 – 11:00	Coffee break
11:10 – 12:00	Plenary Panel Discussion
12:00 – 13:00	Global Airport Benchmarking Awards Session
13:00 – 14:00	Lunch
14:00 – 15:30	Paper Session I
	A1-1 Practical Research 1
	A1-2 Air Cargo 1
	A1-3 Airline Operations 1
	A1-4 Airport Economics & Performance 1
	A1-5 Sustainability in Air Transport 1
15:30 – 16:00	Coffee Break
16:00 – 17:30	Online Paper Session I (broadcasted at venue)
	B1-1 Air Traffic Control 1
	B1-2 Air Transport and COVID-19 1
	B1-3 Air Transport Policy & Regulation 1
	B1-4 Airline Economics & Performance 1
	B1-5 Airline Strategy & Management 1
	B1-6 Airport & Airline Operations
	B1-7 Airport Case Studies 1
	B1-8 Sustainability in Air Transport 2

### FRIDAY, 26 AUGUST – Paper Sessions

07:00 – 08:30	Online Paper Session II (broadcast not provided at venue)
	B2-1 Air Traffic Control 2
	B2-2 Air Transport Demand 1
	B2-3 Air Transport Policy & Regulation 2
	B2-4 Airline Case Studies 1
	B2-5 Airline Operations 2
	B2-6 Airport Economics & Performance 2
	B2-7 Marketing & Consumer Behavior in Air Transport 1
	B2-8 Sustainability in Air Transport 3
08:30 – 17:30	Conference Registration
09:00 – 10:30	Online Paper Session III (broadcasted at venue)
	B3-1 Air Cargo 2

	B3-2	Air Transport and COVID-19 2
	B3-3	Airline Strategy & Management 2
	B3-4	Airport Economics & Performance 3
	B3-5	Airport Strategy & Management 1
	B3-6	Intermodal Operations & Modal Competition 1
	B3-7	Marketing & Consumer Behavior in Air Transport 2
	B3-8	Sustainability in Air Transport 4
10:30 – 11:00	Coffee break	
11:00 – 12:30	Paper Session II	
	A2-1	Practical Research 2
	A2-2	Airline Economics & Performance 2
	A2-3	Airport Case Studies 2
	A2-4	Aviation Safety & Security
12:30 – 14:00	Lunch	
14:00 – 15:30	Paper Session III	
	A3-1	Practical Research 3
	A3-2	Air Traffic Control 3
	A3-3	Air Transport Demand 2
	A3-4	Air Transport Policy & Regulation 3
	A3-5	Airport Strategy & Management 2
15:30 – 16:00	Coffee Break	
16:00 – 17:30	Paper Session IV	
	A4-1	Air Transport and COVID-19 3
	A4-2	Airport Operations 1
	A4-3	Intermodal Operations & Modal Competition 2
	A4-4	Sustainability in Air Transport 5
19:00 – 22:00	Gala Dinner	
<b>SATURDAY, 27 AUGUST – Paper Sessions and Conference Closing Session</b>		
07:00 – 08:30	Online Paper Session IV (broadcast not provided at venue)	
	B4-1	Air Transport Demand 3
	B4-2	Air Transport and COVID-19 4
	B4-3	Air Transport Policy & Regulation 4
	B4-4	Airline Economics & Performance 3
	B4-5	Airport Operations 2
	B4-6	Airport Strategy & Management 3
	B4-7	Aviation & Economic Development
	B4-8	Intermodal Operations & Modal Competition 3
08:30 – 12:00	Conference Registration	
09:00 – 10:30	Paper Session V	
	A5-1	Air Transport and COVID-19 5
	A5-2	Airline Strategy & Management 3
	A5-3	Marketing & Consumer Behavior in Air Transport 3
	A5-4	Sustainability in Air Transport 6
10:30 – 11:00	Coffee break	
11:00 – 12:00	ATRS General Assembly	
12:00 – 12:15	Conference Closing	

## CONFERENCE PROGRAMME

All times in CEST (UTC+2)

### WEDNESDAY, 24 AUGUST

<b>09:00 – 15:30</b>	<b>Meetings (by invitation only)</b>	<b>Room: 201</b>
09:00 – 11:30	ATRS Executive Committee Meeting	
11:30 – 13:00	ATRS Networking Committee Meeting	
<b>13:00 – 14:00</b>	<b>Lunch</b>	
14:00 – 15:00	Airport Benchmarking Taskforce Meeting	
<b>14:00 – 18:00</b>	<b>Ph.D. Student and Junior Faculty Workshop</b>	<b>Room: 202</b>
14:00 – 15:20	<b>Antonio José Pais Antunes</b>   University of Coimbra Topic: Airline Fleet Sizing and Composition	
15:20 – 16:40	<b>Benny Mantin</b>   University of Luxemburg Topic: Airline pricing and revenue management	
16:40 – 18:00	<b>Estelle Malavolti</b>   ENAC and Toulouse School of Economics Topic: Regulation of Airports	
<b>15:30 – 18:00</b>	<b>Conference Registration</b>	
Venue: Entrance Foyer		
<b>18:00 – 20:30</b>	<b>Welcome Reception</b>	
Venue: The Chapel of the Grauwzusters Monastery, University of Antwerp (Lange Sint-Annastraat 7, 2000 Antwerpen)		

### THURSDAY, 25 AUGUST – Plenary Session and Paper Sessions

<b>08:30 – 17:30</b>	<b>Conference Registration</b>	
Venue: Entrance Foyer		
<b>09:00 – 09:15</b>	<b>Welcome Address</b>	<b>Room: Foyer</b>
09:00 – 09:05	<b>Anming Zhang</b>   President of the ATRS	
09:05 – 09:10	<b>Wouter Dewulf</b>   Chair of the 25 <sup>th</sup> ATRS Conference	
09:10 – 09:15	<b>Sven Buyle</b>   Organizer of the 25 <sup>th</sup> ATRS Conference	
<b>09:15 – 09:45</b>	<b>Academic Keynote Speech</b>	<b>Room: Foyer</b>
	<b>Antonio José Pais Antunes</b>   University of Coimbra Topic: Airport slot allocation in times of aviation industry revival	
<b>09:45 – 10:30</b>	<b>Industry Keynote Speeches</b>	<b>Room: Foyer</b>
	<b>Wolfgang Raebiger</b>   CEO Discover, Lufthansa Group Topic: The Enrowings Discover story: Setting up an airline in 330 days. Will leisure travel save the aviation sector beyond 2022?	
	<b>Guillaume Burghouwt</b>   Strategy Lead, Royal Schiphol Group Topic: Air Transport after Covid19, challenges and opportunities, the airport point of view!	
<b>10:30 – 11:00</b>	<b>Coffee break</b>	
<b>11:10 – 12:00</b>	<b>Plenary Panel Discussion</b>	<b>Room: Foyer</b>
	Topic: Qua vadis Post Covid-19 Air Transport? Challenges and Opportunities in this new Era. Speakers: <b>Sascha Albers; Guillaume Burghouwt; Mitchell Kilian; Antonio José Pais Antunes; Wolfgang Raebiger</b>	

Moderated by **Wouter Dewulf**

---

**12:00 – 13:00**      **Global Airport Benchmarking Awards Session**      **Room: Foyer**

**Chunyan Yu** | Embry-Riddle Aeronautical University

---

**13:00 – 14:00**      Lunch

---

**14:00 – 15:30**      **Paper Session I**

---

**14:00 – 15:30**    A1-1    **Practical Research 1**      **Room: 001a**

Chair: **Kurt Fuellhart** | Unison Consulting, Inc.

- 360    Addressing COVID-19 Pandemic Shocks in Air Traffic Forecasting: Applications to U.S. Airports  
(Sharon Sarmiento, Unison Consulting, Inc.)
- 181    Air Transportation Demand Volatility Modeling During Covid-19 Period  
(Suhyung Lee, Korea Airport Corporation)
- 198    UK Regional Airports: An Analysis of Passenger Car Parking Revenue Management  
(Richard Moxon, Cranfield University)
- 277    Advanced Capacity and Demand Management for European Network Performance Optimization  
(Frank Fichert, Worms University of Applied Sciences; Nikola Ivanov, University of Belgrade; Radosav Jovanovic, University of Belgrade; Arne Strauss, WHU - Otto Beisheim School of Management; Jan-Rasmus Kuennen, WHU - Otto Beisheim School of Management; Marc Melgosa Farres, Universitat Politecnica de Catalunya - Barcelona Tech; Jovana Kuljanin, Universitat Politecnica de Catalunya - Barcelona Tech)

---

**14:00 – 15:30**    A1-2    **Air Cargo 1**      **Room: 001b**

Chair: **Thomas Van Asch** | University of Antwerp

- 68    Effects of Protective Tariffs on Air Cargo  
(Chunyan Yu, Embry-Riddle Aeronautical University; Li Zou, Embry-Riddle Aeronautical University)
- 80    Air cargo supply parameters and forecast  
(Vincent Van Bockstaele, University of Antwerp; Wouter Dewulf, University of Antwerp; Sven Buyle, University of Antwerp)
- 303    Analyzing Air Cargo Turnaround Times  
(Anne Lange, University of Luxembourg; Sarah Van der Auweraer, University of Luxembourg)
- 330    The Airport Cargo Strategy Canvas: An Application to Brussels Airport (BRU)  
(Thomas Van Asch, University of Antwerp; Wouter Dewulf, University of Antwerp; Eddy Van de Voorde, University of Antwerp)

---

**14:00 – 15:30**    A1-3    **Airline Operations 1**      **Room: 002**

Chair: **Sebastian Birolini** | University of Bergamo

- 214    Models and Algorithms for Optimizing Aircraft Maintenance Processes  
(Onyedikachi Chioma Okoro, National Aviation University, Kyiv ; Maksym Zaliskyi, National Aviation University, Kyiv)
- 293    Electric Aircraft Flight Scheduling and Fleet Assignment for Subsidized Routes  
(Sebastian Birolini, University of Bergamo; Alan Kinene, Linköping University)



- 295 Common Use Self-Service Technologies in Airport Terminals: evaluating benefits through simulation  
(Alejandro Manrique Morales, RWTH Aachen University; Idoaldo Jose De Lima, RWTH Aachen University; Giovanna Miceli Ronzani Borille, Department of Air Transport and Airports; Reichmuth Johannes, RWTH Aachen University)
- 339 Passengers with Reduced Mobility Travel: Examining the Operational Aspects  
(Frances Kremarik, University of Westminster)

14:00 – 15:30 A1-4 Airport Economics & Performance 1 Room: 003

Chair: **Hans-Martin Niemeier** | Bremen University of Applied Sciences

- 97 The impact of size and ownership on the financial performance of European commercial airports  
(Sunder Raghavan, Embry-Riddle Aeronautical University; Federico Rotondo, University of Sassari; Lucia Giovanelli, University of Sassari)
- 289 Integrating passenger satisfaction into airport operational performance using multi step DEA analysis  
(Safia Bahas, Loughborough University; Andrew Timmis, Loughborough University; Mohammed Quddus, Imperial College London; Taimaz Larimian, Loughborough University)
- 302 The Effect of Entry and Exit on Airport Competition in Europe  
(Hans-Martin Niemeier, Bremen University of Applied Sciences)
- 328 The Competitiveness of Australian Regional Airports  
(Tommy Cheung, Swinburne University of Technology; Simon Cheung, The Chinese University of Hong Kong; Anming Zhang, University of British Columbia)

14:00 – 15:30 A1-5 Sustainability in Air Transport 1 Room: 004

Chair: **Laingo Randrianarisoa** | Kedge Business School

- 202 Understanding research trends in the air transportation sector using topic modeling  
(CHAEHWAN LIM, Inha University; Hun-Koo Ha, Inha University; Dohun Kim, Inha University)
- 207 Welfare-oriented Flight Scheduling and Fleet Assignment Model  
(Emanuele Besana, University of Bergamo; Sebastian Birolini, University of Bergamo; Renato Redondi, University of Bergamo; Guillaume Burghouwt, Royal Schiphol Group)
- 247 Quantifying the Uncertainty of Aircraft Fuel Consumption on Airline Networks  
(Chun-Chieh Yen, National Yang Ming Chiao Tung University; Yi-Shih Chung, National Yang Ming Chiao Tung University)
- 331 Evaluation of new flight routes for Haneda airport in terms of aircraft noise abatement  
(Shuhei Kaneko, Tokyo Denki University; KAZUYUKI TAKADA, Tokyo Denki University; Yuta Arakawa, Tokyo Denki University)

15:30 – 16:00 Coffee Break

16:00 – 17:30 Online Paper Session I (broadcasted at venue)

16:00 – 17:30 B1-1 Air Traffic Control 1 Broadcast room: 001a

Chair: **Nico Flüthmann** | German Aerospace Center (DLR)

- 33 Discovering the relationship between aviation noise and flight frequency: How Air Traffic Flow Management can improve health and disparities  
(Sheng Hsiang Peng, University of California, Irvine)

- 197 Prediction of Traffic Conflicts Between UAM and Commercial Aircraft Using Monte Carlo Simulation  
(João Vitor Turchetti Ribeiro, Aeronautics Institute of Technology; Wallace Souza, Aeronautics Institute of Technology; Mayara Murça, Aeronautics Institute of Technology; Marcelo Guterres, Aeronautics Institute of Technology)
- 218 Resilience analysis of air traffic systems based on complex networks  
(Francisco Claudio Sampaio, Aeronautics Institute of Technology (ITA); Raimundo Nogueira da Costa Filho, Federal University of Ceara (UFC); Lucas Coelho e Silva, Aeronautics Institute of Technology (ITA); Marcelo Xavier Guterres, Aeronautics Institute of Technology (ITA))
- 268 A room for flexible products in Air Traffic Management? Results of a stated-preference survey of airspace users  
(Marc Melgosa, Technical University of Catalonia (UPC); Jovana Kuljanin, Technical University of Catalonia (UPC); Radosav Jovanovic, University of Belgrade - Faculty of transport and traffic engineering; Frank Fichert, Worms University of Applied Sciences)

16:00 – 17:30 B1-2 Air Transport and COVID-19 1

Broadcast room: 001b

Chair: **Seock-Jin Hong** | University of North Texas

- 46 Heterogeneous effects of COVID-19 on “near-miss” incidents in aviation: lessons with a causal machine learning  
(Youngran Choi, Embry-Riddle Aeronautical University; James Gibson, Embry-Riddle Aeronautical University)
- 61 Determinants of Domestic Air Transportation Demand in the United States under Unanticipated Economic Disruption  
(David Hopfe, Embry-Riddle Aeronautical University; Kay Lee, Embry-Riddle Aeronautical University; Chunyan Yu, Embry-Riddle Aeronautical University)
- 81 A Comparative Analysis of UK Airport Strategy Since Covid-19  
(Anne Graham, University of Westminster; Lucy Budd, De Montfort University; Stephen Ison, De Montfort University)
- 219 Future airport ground access management: Agenda setting post COVID-19  
(Oguzhan Yilmaz, Loughborough University; Andrew Timmis, Loughborough University; Stephen Ison, De Montfort University; Matthew Frost, Loughborough University)
- 241 COVID-19 Impact the Perception of Air Cargo Business Environment at Hub Airport  
(Seock-Jin Hong, University of North Texas; Woongyi Kim, Hanseo University)

16:00 – 17:30 B1-3 Air Transport Policy & Regulation 1

Broadcast room: 002

Chair: **Tyler Spence** | Embry-Riddle Aeronautical University

- 8 Fare Impacts of a Legislative Change in Takeoff and Landing Restrictions: The Case of Newark Liberty Airport  
(Jules Yimiga, Embry-Riddle Aeronautical University; Javad Gorjidooz, Embry-Riddle Aeronautical University)
- 49 Regulatory Convergence between U.S. Antitrust Law and EU Competition Law in International Air Transport – Taking Stock  
(Antigoni Lykotrafiti, Queen Mary University of London)
- 159 Creating a Framework for Community Integration of Urban Air Mobility  
(Aaron Organ, Cranfield University)
- 316 Cultural Metrics and Aviation Agreements  
(Tyler Spence, Embry-Riddle Aeronautical University; Hanzi Xie, Purdue University)



- 367 The Importance of Public-Private Partnerships for National Integration: Case Study of Regional Airports in the State of Amazonas  
(Walmir José Souza, Ministry of Infrastructure; Rafael Magalhães Furtado, Ministry of Infrastructure; Marcelo Sampaio Cunha Filho, Ministry of Infrastructure; Marcelo de Canossa Macedo, Ministry of Infrastructure; Vinícius Resende Domingues, Ministry of Infrastructure)

---

16:00 – 17:30 B1-4 Airline Economics & Performance 1

Broadcast room: 003

---

Chair: **Jayendra Gokhale** | Washington State University

- 21 Influence of extraordinary expenses with passengers on the production of an Air Carrier: an application based on the Cobb-Douglas model  
(Gabriel Torres, Aeronautics Institute of Technology; Victor Celestino, University of Brasilia; Marcelo Guterres, Aeronautics Institute of Technology; Rogéria Eller, Aeronautics Institute of Technology)
- 113 The Impact of Airplane Delays on Airfares  
(Jae Young Hwang, Washington State University)
- 223 Application of Relational Machine Learning to construct Explainable AI models from airline big data  
(Amr Soliman, University of Surrey; John O'Connell, University of Surrey; Alireza Tamaddoni-Nezhad, University of Surrey)
- 314 Air travel and hotel occupancy - Evidence from pre-pandemic era  
(Jayendra Gokhale, Embry-Riddle Aeronautical University; Yiru Zhang, Ascend by Cirium; Maria Kaselow Salas, Frontier Airlines)

---

16:00 – 17:30 B1-5 Airline Strategy & Management 1

Broadcast room: 004

---

Chair: **Li Zou** | Embry-Riddle Aeronautical University

- 39 Potential Indirect Connectivity between LCCs and Other Airlines Participating in the 'Worldwide by Easyjet' Self-Connection Scheme  
(Povilas Stonys, University of Surrey; John O'Connell, University of Surrey; David Warnock-Smith, Buckinghamshire New University; Nadine Itani, University of Surrey)
- 53 Management Perceptions on the Link between Sources of Growth and the LCC Business Model  
(Mateus Pongeluppi, Reykjavik University; Sveinn Gudmundsson, Reykjavik University)
- 77 An Analysis of Northeast Alliance between American and JetBlue during the Pandemic  
(Li Zou, Embry-Riddle Aeronautical University; Chunyan Yu, Embry-Riddle Aeronautical University; Daniel Friedenzohn, Embry-Riddle Aeronautical University)
- 107 Passengers' Perceptions of Airlines' Logo Design and Their Business Models  
(Jiayu Liu, Purdue University; Yi Gao, Purdue University; Christina Beck, Purdue University)

---

16:00 – 17:30 B1-6 Airport & Airline Operations

Broadcast room: 101

---

Chair: **Tamilla Curtis** | Embry-Riddle Aeronautical University

- 87 Caribbean Inter-Island Connectivity and Sustainable Development: The case of Bahamas  
(Tamilla Curtis, Embry-Riddle Aeronautical University)
- 90 Cost-efficient aircraft maintenance planning integrating task and workforce scheduling over multiple bases

(José-Ignacio Sanhueza Montequin, Pontificia Universidad Católica de Chile; Felipe Delgado Breinbauer, Pontificia Universidad Católica de Chile; Mathias Klapp, Pontificia Universidad Católica de Chile)

- 201 A Monte Carlo simulation model to predict maintenance and associated costs of runway edge lights  
(Wallace Souza, Aeronautics Institute of Technology; Marcelo Guterres, Aeronautics Institute of Technology; Mayara Condé, Aeronautics Institute of Technology; Cláudio Alves, Aeronautics Institute of Technology; Ernesto Marujo, Aeronautics Institute of Technology)
- 210 Technological surveillance as a tool for competitiveness evolution for airport efficiency and productivity  
(Maria Clara Roza Terreiro Seffrin, Instituto Tecnológico de Aeronáutica; Marcelo Xavier Guterres, Instituto Tecnológico de Aeronáutica; Cláudio Albano, Universidade Federal do Pampa; Evandro José da Silva, Instituto Tecnológico de Aeronáutica; Mauro Caetano de Souza, Instituto Tecnológico de Aeronáutica)

16:00 – 17:30 B1-7 Airport Case Studies 1

Broadcast room: 102

Chair: **Jorge Silva** | UBI- University of Beira Interior

- 104 Analysis of the impact of pollutant emissions from LTO cycles: a case study of Galeão International Airport in Rio de Janeiro  
(Jonathan Pinheiro, UFRJ - Federal University of Rio de Janeiro; Elton Fernandes, Federal University of Rio de Janeiro; Marcelino Silva, Federal University of Rio de Janeiro)
- 205 Analysis of Economic Impact of a Relevant Regional Airport in São Paulo State - A Case Study  
(Matheus Novaes Valinho, Aeronautics Institute of Technology; Marcelo Xavier Guterres, Aeronautics Institute of Technology; Anderson Ribeiro Correia, Aeronautics Institute of Technology; Michelle Carvalho Galvão da Silva Pinto Bandeira, Goias Federal University; Mauro Zackiewicz, Aeronautics Institute of Technology; Tozi Luiz Antonio, Aeronautics Institute of Technology)
- 284 Passenger Flow Optimization in Airport Terminal: The case of Madeira International Airport Cristiano Ronaldo  
(Jorge Silva, UBI- University of Beira Interior; Maria Baltazar, ISEC Lisbon)
- 310 Estimating population affected by aircraft noise in a Brazilian hub with a densely urbanized vicinity  
(Paola Cemin da Silva, Transportation and Logistics Laboratory of the Federal University of Santa Catarina (LabTrans/UFSC); Luis Antonio Bueno, Transportation and Logistics Laboratory of the Federal University of Santa Catarina)

16:00 – 17:30 B1-8 Sustainability in Air Transport 2

Broadcast room: 103

Chair: **Lynnette Dray** | University College London

- 17 Urban air mobility: challenges and opportunities in the metropolitan region of São Paulo  
(Dario Lopes, Universidade Mackenzie; Jorge Miguel Reis Silva, Universidade Beira Interior)
- 34 Modelling the impact of small hydrogen aircraft characteristics on potential UK domestic uptake  
(Lynnette Dray, University College London; Khan Doyme, University College London; Joanna Kuleszo, University College London; Andreas Schafer, University College London)
- 206 The Challenges of Sustainable Aviation in the Caribbean: An Assessment and Future Research Direction

(Dennis Mc Call Jr, De Montfort University; Lucy Budd, De Montfort University; Stephen Ison, De Montfort University)

292 Electric Aircraft Charging Network Design for Regional Routes: A Novel Mathematical Formulation and Kernel Search Heuristic

(Alan Kinene, Linköping University; Sebastian Birolini, University of Bergamo; Mattia Cattaneo, University of Bergamo; Tobias Andersson Granberg, Linköping University)

## FRIDAY, 26 AUGUST – Paper Sessions

07:00 – 08:30 Online Paper Session II (broadcast not provided at venue)

07:00 – 08:30 B2-1 Air Traffic Control 2

Chair: **Linfeng Zhang** | University of International Business and Economics

12 The approach to aviation and bird coexistence: a bayesian approach to birdstrike risk in urban airspace

(Xiaoyu O. Wu, Griffith University; Genevieve Hackett, Griffith University; Sual Robinson, Fraign Analytics LLC; Sravan Pingali, Griffith University; Xu Shi, The University of Queensland)

141 Estimating Aircraft Departure Queue at a Runway Applying Time-Varying Fluid Queue Model  
(Daiki Iwata, The University of Tokyo/ENRI; Eri Itoh, The University of Tokyo/ENRI; Michael Schultz, Technische Universität Dresden)

169 Will solar activity affect our flights?

(Linfeng Zhang, University of International Business and Economics; Hangjun Yang, University of International Business and Economics)

252 Optimizing Air Traffic Operations in Congested Terminal Manoeuvring Areas

(Wayne Ng, Singapore University of Technology and Design (SUTD); Nuno Ribeiro, Singapore University of Technology and Design)

07:00 – 08:30 B2-2 Air Transport Demand 1

Chair: **Yahua Zhang** | University of Southern Queensland

190 A Study on International Passenger Charter Operation of Japan

(Xiaoen Li, Sichuan University; Chuntao Wu, Sichuan University; Yan Li, Sichuan University)

240 Optimal Inter-city Travel Network shape considering the Seasonal Changes in Travel Demand

(Yusuke Fujita, Kanazawa University; Hiromichi Yamaguchi, Kanazawa University; Syoichiro Nakayama, Kanazawa University)

262 Modeling air transportation cost and international tourism demand: An Australian case study

(Rockie U Kei Kuok, University of Macau; Tay Koo, University of New South Wales; Christine Lim, University of Macau)

312 Air travel demand and ICT innovations

(Yahua Zhang, University of Southern Queensland; Zhibin Huang, University of Southern Queensland)

07:00 – 08:30 B2-3 Air Transport Policy & Regulation 2

Chair: **Hangjun Yang** | University of International Business and Economics

65 Factors Sustaining International Flights in Japan - Focusing on airports other than Narita, Kansai and Haneda

(Tomoaki Nakamura, Keio University; Kazusei Kato, Keio University)

- 88 Regulatory capture, single-till regulation, and dual-till regulation: When does a regulatory authority favor single-till regulation over dual-till regulation?  
(Yukihiro Kidokoro, National Graduate Institute for Policy Studies; Anming Zhang, University of British Columbia)
- 111 Impact of Air Connectivity on Bilateral Service Trade Flow - The Case of China  
(Kun Wang, University of International Business and Economics; Tae Oum, University of British Columbia; Xiangru Wu, University of International Business and Economics)
- 180 Impact of low-cost carriers on full-service airlines due to market access deregulation  
(Hangjun Yang, University of International Business and Economics; Meng Hou, University of International Business and Economics; Wentao Yang, University of International Business and Economics; Kun Wang, University of International Business and Economics)

---

#### 07:00 – 08:30 B2-4 Airline Case Studies 1

Chair: **Junbiao Su** | The Hong Kong Polytechnic University

- 25 Comparative Analysis of Runway Excursions in Taiwan and Indonesia: HFACS-RE  
(Thomas Gunadi Panatan, Chang Jung Christian University; Hui-Hua Yang, Chang Jung Christian University)
- 178 Auditing Policy on Capacity Purchase Agreement—the case of China Express Airlines  
(Yilin Chen, University of International Business and Economics; Changmin Jiang, University of International Business and Economics; Shiyuan Zheng, Shanghai Maritime University)
- 344 Multimarket contact and airline competition: a study in a low-cost carrier dominant market  
(Junbiao SU, The Hong Kong Polytechnic University; Xiaowen FU, Department of Industrial and Systems Engineering; Chuanyang ZHU, The Hong Kong Polytechnic University)
- 361 Determinants of Airline Route Profitability: The Case of a Small National Hub Carrier in South Asia  
(Sumudu Upatissa, Swinburne University of Technology; Zheng Lei, Swinburne University of Technology; Tommy Cheung, Swinburne University of Technology)

---

#### 07:00 – 08:30 B2-5 Airline Operations 2

Chair: **Achim I. Czerny** | The Hong Kong Polytechnic University

- 9 Hello, welcome aboard: Greeting from AI flight attendants  
(Shu-Chuan Chen, Tamkang University)
- 38 Converting Passenger Airline into Cargo Plane: Firm strategies and Welfare Analysis  
(Shiyuan Zheng, Shanghai Maritime University; Changmin Jiang, University of International Business and Economics)
- 142 Engine option in aircraft: A three-echelon supply chain model  
(Ruotian Chen, University of International Business and Economics; Changmin Jiang, University of International Business and Economics)
- 324 Airline Delay Propagation: A Simple Method for Measuring its Extent and Determinants  
(Achim I. Czerny, The Hong Kong Polytechnic University; Jan K. Brueckner, University of California Irvine; Alberto A. Gaggero, University of Pavia)

---

#### 07:00 – 08:30 B2-6 Airport Economics & Performance 2

Chair: **Koji Adachi** | Osaka Sangyo University

- 48 The Impact of Aircraft Noise on Residential Property Values in a Multi-Airport Region  
(Simon Cheung, The Chinese University of Hong Kong; Tommy Cheung, Swinburne University of Technology)

- 144 Does New Airport Investment Promote Urban Economic Progress?: Global Evidence from Nighttime Light Imagery  
(Kumiko Uchida, The University of Tokyo; Hironori Kato, The University of Tokyo; Jin Murakami, Singapore University of Technology and Design; Wataru Takeuchi, The University of Tokyo)
- 161 The Geographical Distribution of Airports in Japan  
(Hidenobu Matsumoto, Kwansai Gakuin University; Koji Domae, Kansai Gaidai University)
- 235 The relationships between airport location and environmental efficiency of Japanese major airports: A directional distance function approach  
(Koji Adachi, Osaka Sangyo University; Seiichiro Mizuta, Kobe University; Yushi Tsunoda, Kobe University; Kanto Takebayashi, Kobe University)

---

#### 07:00 – 08:30 B2-7 Marketing & Consumer Behavior in Air Transport 1

Chair: **Shin-Hyung Cho** | University of Seoul

- 91 Airports as Compound Brands  
(Isaac Levi Henderson, Massey University; Mark Avis, Massey University; Kan Wai Hong Tsui, Massey University; Andrew Gilbey, Massey University; Thanh Ngo, Massey University)
- 258 Exploring the Mode Choice Behaviors to Develop the Transport Policy for the Proliferation of Urban Air Mobility  
(Shin-Hyung Cho, University of Seoul; Myeonghyeon Kim, Korea Transport Institute)
- 332 Evaluation of Penalty and Enforcement Strategies against False Health Declaration and Air Travelers' Privacy Concern in Health Reporting Application  
(Tiantian CHEN, The Hong Kong Polytechnic University; Xiaowen Fu, The Hong Kong Polytechnic University; Aupal Mondal, The University of Texas at Austin; Chandra R. Bhat, The University of Texas at Austin)
- 337 Research on passenger portrait data collection method based on terminal environment simulation survey  
(Jiaqi Su, Nanjing University of Aeronautics and Astronautics; Jing Lu, Nanjing University of Aeronautics and Astronautics)

---

#### 07:00 – 08:30 B2-8 Sustainability in Air Transport 3

Chair: **Eric Tiansay** | Philippine State College of Aeronautics Basa Air Base Campus

- 50 An Evaluation of Strategical Alternatives for Developing a Sustainable Taoyuan International Airport (TPE)  
(Chi-Hsin Liu, National Taiwan Ocean University; Po-Lin Wang, Kaohsiung International Airport (KHH); Hua-An Lu, National Taiwan Ocean University)
- 52 Exploration of the demand for airports to introduce intelligent carbon reduction and energy-saving  
(Pei-Ching Chang, National Kaohsiung University of Science and Technology; Ching-Cheng Chao, National Kaohsiung University of Science and Technology)
- 108 Aircraft emissions -a systematic literature review  
(Manori Dissanayaka, Griffith University; Tim Ryley, Griffith University; Bojana Spasojevic, Griffith University)
- 355 Strategies of the Philippine Air Transport Operators for Carbon Offsetting and Reduction  
(Eric Tiansay, Philippine State College of Aeronautics Basa Air Base Campus; Lea Lanete, Philippine State College of Aeronautics Villamor Campus; Mercy Guinto, Philippine State College of Aeronautics Basa Air Base Campus)

08:30 – 17:30 Conference Registration

Venue: Entrance Foyer

09:00 – 10:30 Online Paper Session III (broadcasted at venue)

09:00 – 10:30 B3-1 Air Cargo 2 Broadcast room: 001a

Chair: **Florian Heinitz** | Erfurt University of Applied Sciences

- 10 Two-Stage Routing Algorithm for a Collaborative Urban Delivery by Drones and Trucks (Florian Heinitz, Erfurt University of Applied Sciences; Zhang Ruiyang, RWTH Aachen University; Xiao Junfeng, RWTH Aachen University)
- 35 Air cargo Trade and Economic Diversification: Experience from Nigeria and Ghana (Adedotun Joseph Adenigbo, University of Johannesburg, South Africa; Joash Mageto, University of Johannesburg, South Africa; Rose Luke, University of Johannesburg, South Africa)
- 163 Air Cargo Cluster Analysis based on its Volume and Value (Amani Karunathilake, University of Moratuwa; Anuja Fernando, University of Moratuwa; Anuradha Munasinghe, Boffin Institute of Data Science)
- 188 Risk Assessment of temperature-sensitive Products cold chain logistics by air transportation (Chao-Hung Chiang, National Penghu University of Science and Technology; Chia-Hsun Chang, Liverpool John Moores University; Cheng-Pei Chung, Chang Gung University of Science and Technology)

09:00 – 10:30 B3-2 Air Transport and COVID-19 2 Broadcast room: 001b

Chair: **Yu-Chun Chang** | National Taiwan Ocean University

- 44 A Revision of Air Transport Long-Term Trends in the Light of the COVID-19 Pandemic (Nico Flüthmann, German Aerospace Center (DLR); Alexandra Leipold, DLR (German Aerospace Center))
- 136 Impact of COVID-19 on airline passengers' preferences for advance seat reservation (Zheng Tai, Feng Chia University; Chieh-Hua Wen, Feng Chia University)
- 242 The Influence of COVID-19 Pandemic on Connectivity of East Asia Airports: The Case of Southeast Asia – North America Routes (Yu-Chun Chang, National Taiwan Ocean University; Hsin-Yun Lin, National Taiwan Ocean University; Wen-Chun Tseng, Central Queensland University)
- 357 A Narrative Inquiry on Identity Construction of Filipino Ab Initio Pilots amidst the Pandemic (Ramsey Ferrer, Philippine State College of Aeronautics)

09:00 – 10:30 B3-3 Airline Strategy & Management 2 Broadcast room: 002

Chair: **Davide Scotti** | University of Bergamo

- 4 Forecasting survival of air services with flight schedules data (Matthias Viehmann, Competence Center Aviation Management / Worms University of Applied Sciences; Richard Klophaus, Competence Center Aviation Management / Worms University of Applied Sciences)
- 66 An Assessment of Next Generation Narrow Body Aircraft Scale and Scope Opportunities Associated with Transatlantic Long-Haul Low-Cost Operations



(Edoardo D'Alessandro, Ecole de Management de Lyon; Alberto Consiglio, Buckinghamshire New University; David Warnock-Smith, Buckinghamshire New University; George Georgiou, Buckinghamshire New University)

- 92 The Relationship between Fleet Structures and Business Models of Combined Airline Cargo Companies: A Comparison with Apriori Algorithm  
(Ihsan Emrehan Sahin, Tarsus University; Savas S. Ates, Eskisehir Technical University)
- 280 Pricing effects of airline cooperation on the intra-African air routes  
(Davide Scotti, University of Bergamo; Andrea Gualini, University of Bergamo; Gianmaria Martini, University of Bergamo)

---

09:00 – 10:30 B3-4 Airport Economics & Performance 3 Broadcast room: 003

Chair: **Shangrong Chen** | ENAC

- 67 Negotiation games and market power for the environment in airport settings: evidence from stakeholders and windows of opportunity  
(Laura Khammash, University of Lisbon; Vasco Reis, University of Lisbon; Rosario Macario, University of Lisbon)
- 213 Behavioral cost-benefit analysis for airport infrastructures  
(Alvaro Rodriguez-Sanz, Universidad Autonoma de Madrid (UAM); Luis Rubio Andrada, Universidad Autonoma de Madrid (UAM))
- 217 Modelling and estimating the airport program: A two-sided platform approach  
(Shangrong Chen, ENAC; Christian Bontemps, ENAC & TSE; Estelle Mala, ENAC & TSE)
- 322 Modelling the impact of product differentiation and competition on airport charges  
(Augustin Lesgourgues, Paris-Dauphine University - PSL; Estelle Malavolti, French School of Civil Aviation (ENAC))

---

09:00 – 10:30 B3-5 Airport Strategy & Management 1 Broadcast room: 004

Chair: **Mingchuan Luo** | Dresden University of Technology

- 93 Time-based Content Analysis of Airports' Digital Platform Shares Before, During and After Covid-19  
(Sema Battal, Eskisehir Technical University; Savas S. Ates, Eskisehir Technical University)
- 117 The Effects of the Vertical Cooperation Strategy between Airports and Airlines on the Operating Performance of Airlines  
(Armağan Macit, Ege University; Mehmet Başar, Anadolu University)
- 320 Effect of COVID-19 Pandemic on Small and Regional Airports in India  
(Surjaa Chakravarti, Jawaharlal Nehru University)
- 348 Data-driven fusion of turnaround sub-processes to predict aircraft ground time  
(Mingchuan Luo, Dresden University of Technology; Michael Schultz, Dresden University of Technology; Hartmut Fricke, Dresden University of Technology)

---

09:00 – 10:30 B3-6 Intermodal Operations & Modal Competition 1 Broadcast room: 101

Chair: **Isabelle Laplace** | ENAC

- 76 High-speed rail and air transport integration in congested hub-and-spoke networks: the role of airports  
(Tiziana D'Alfonso, Sapienza Univerità di Roma; Alessandro Avenali, Sapienza Univerità di Roma; Pierfrancesco Reverberi, Sapienza Univerità di Roma)
- 94 Developing multimodal, air-rail scenarios for Europe

(Ulrike Schmalz, Bauhaus Luftfahrt e. V.; Annika Paul, Bauhaus Luftfahrt; Isabelle Laplace, Ecole Nationale de l'Aviation Civil; Andrew Cook, University of Westminster; Tatjana Bolic, University of Westminster; Vanessa Pérez, INTERNATIONAL UNION OF RAILWAYS; Nadine Pilon, EUROCONTROL)

- 283 Economic Modeling of Multimodal Mobility Demand  
(Sébastien Parenty, ENAC, Université de Toulouse, France; Isabelle Laplace, ENAC, Université de Toulouse, France)
- 286 Substitution path between air and rail in Europe: a measure of demand drivers  
(Isabelle Laplace, ENAC; Chantal Roucolle, ENAC; Nathalie Lenoir, ENAC; Pierre Arich, ENAC; Sébastien Parenty, ENAC; Annika Paul, Bauhaus Luftfahrt; Tatjana Bolić, University of Westminster)

---

09:00 – 10:30 B3-7 Marketing & Consumer Behavior in Air Transport 2 Broadcast room: 102

Chair: **Miguel Urdanoz** | TBS Education

- 23 Platform - sellers' agreements and consumer welfare: American airlines vs Expedia  
(Miguel Urdanoz, TBS Education; Raquel Sampaio, Universidade Federal do Rio Grande do Norte)
- 125 Optimal pricing mechanism for non-storable goods: the power of opaque products  
(JUANA MARIA ALONSO DENIZ, Universidad de Las Palmas de Gran Canaria; M. PILAR SOCORRO QUEVEDO, Universidad de Las Palmas de Gran Canaria)
- 338 Applying Stereotype Content Model to Explore the Relationship between Airline Brand Aesthetics and Passenger Intention to Fly  
(JIN-LONG LU, National Kaohsiung University of Science and Technology)
- 362 Customized airline offer management: a conceptual architecture  
(Daniel Schubert, Universiteit Antwerpen; Christa Sys, Universiteit Antwerpen; Rosário Macário, Universiteit Antwerpen)

---

09:00 – 10:30 B3-8 Sustainability in Air Transport 4 Broadcast room: 103

Chair: **Stefan Baumeister** | University of Jyväskylä

- 123 The potential of combining surface and air transport emissions for a zero emissions future  
(Stefan Baumeister, University of Jyväskylä, School of Business and Economics; Tim Ryley, Griffith University; Abraham Leung, Griffith University)
- 212 Assortment of airport operators' performance towards sustainable development  
(Aristi Karagkouni, Democritus University of Thrace (DUTH); Dimitrios Dimitriou, Democritus University of Thrace (DUTH))
- 215 Adopting hydrogen technology in air transport: An evolutionary game theory approach  
(Sai Bravo, ENAC; Shangrong CHEN, enac; Romain Mongeau, ENAC; Estelle Malavolti, enac)
- 335 Analyzing participation of CORSIA for Large Developing Countries using Time Sensitive Graph Model for Conflict Resolution  
(Shawei He, Nanjing University of Aeronautics and Astronautics)

10:30 – 11:00 Coffee break

11:00 – 12:30 Paper Session II

---

11:00 – 12:30 A2-1 Practical Research 2 Room: 001a

Chair: **Kurt Fuellhart** | Unison Consulting, Inc.

- 13 Managing delays and incidents at intermodal airport hubs in a more efficient way  
(Janina Scheelhaase, German Aerospace Center (DLR); Benedikt Scheier, German Aerospace Center (DLR); Erik Grunewald, German Aerospace Center (DLR); Saskia Seidel, German Aerospace Center (DLR); Thomas Christ, German Aerospace Center (DLR); Ulf Noyer, German Aerospace Center (DLR); Sven Maertens, German Aerospace Center (DLR))
- 16 Short-haul airline services in Europe and North America - Is there a common business strategy?  
(Richard Klophaus, Worms University of Applied Sciences; Chunyan Yu, Embry-Riddle Aeronautical University)
- 186 From passenger itineraries to climate impact: Analyzing the implications of a new mid-range aircraft on the global air transportation system  
(Markus Kuehlen, German Aerospace Center (DLR); Katrin Koelker, German Aerospace Center (DLR); Florian Linke, German Aerospace Center (DLR); Katrin Dahlmann, German Aerospace Center (DLR); Volker Gollnick, Hamburg University of Technology; Klaus Luetjens, German Aerospace Center (DLR))
- 256 From Air Traffic Management to Total Traffic Management - Preliminary Concept of Operations  
(Peter A. Meincke, German Aerospace Center (DLR); Margarita Bagamanova, Amsterdam University of Applied Sciences)

---

11:00 – 12:30 A2-2 Airline Economics & Performance 2 Room: 001b

Chair: **Christian Bontemps** | ENAC & Toulouse School of Economics

- 168 Policy impacts on the propensity to travel by HSR in the Amsterdam – London market  
(Nicolò Avogadro, University of Bergamo; Renato Redondi, University of Bergamo; Eric Pels, VU University)
- 228 Aviation ETS allowances: Auctioned or Free  
(Peter Forsyth, Monash University)
- 271 An in-depth analysis of multi-layer interactions in the domestic air transport network of China: 2009-2019  
(Edgar Jimenez, Cranfield University; Berkcan Uyan, Cranfield University; Chikage Miyoshi, Cranfield University; Thomas Budd, Cranfield University)
- 319 Comparison of Market Structure and Consumer Behavior: A Study of the U.S. and European Airline Markets  
(Christian Bontemps, ENAC & Toulouse School of Economics; Xiaoyu Yan, The Graduate Institute, Geneva)

---

11:00 – 12:30 A2-3 Airport Case Studies 2 Room: 002

Chair: **Michael Stanton-Geddes** | ACI EUROPE

- 129 When good planning is not good enough – the case of a repatriation flight during COVID-19  
(Fabian Steinmann, Cranfield University; Colin Pilbeam, Cranfield University; Graham Braithwaite, Cranfield University)
- 222 An Analysis of Aeropolitical Policy in Hong Kong: A Case Study  
(Scott Porter, University of Surrey; John Frankie O'Connell, University of Surrey; Nikolas Thomopoulos, University of Surrey; Nadine Itani, University of Surrey)
- 237 Application of customer experience service measurement model to Incheon International Airport

(Yu-Jin Choi, Incheon International Airport Corporation; Hanbyeol Jeong, Incheon International Airport Corporation; Jeong-Eun Choi, Incheon International Airport Corporation; Se-Yeon Jung, Incheon International Airport Corporation)

- 321 Unearthing Passenger Emotional Engagement with Artificial Intelligence  
(Ioanna Papadopoulou, Athens International Airport; SUMAIR SAYANI, PathosAI)

11:00 – 12:30 A2-4 Aviation Safety & Security

Room: 003

Chair: **Sohel Imroz** | Embry-Riddle Aeronautical University

- 152 Factors affecting the work-life balance perception of flight instructors  
(Sohel Imroz, Embry-Riddle Aeronautical University; Farhan Sadique, Penn State University; Se Hee Sim, Embry-Riddle Aeronautical University; Omar Perez, Embry-Riddle Aeronautical University; Daniel Kim, Embry-Riddle Aeronautical University)
- 221 Investigating exit choice decisions in aircraft emergency evacuation  
(Chenchen Xu, Ghent University; Yiyang Luo, V. N. Karazin Kharkiv National University; Frank Witlox, Ghent University)
- 250 Comprehensive analysis of the questionnaire results on the importance of influencing factors during airplane emergency evacuation by using preference matrix and fuzzy logic  
(Yiyang LUO, V N Karazin Kharkiv National University; Chenchen Xu, Ghent University; Frank Witlox, Ghent University)
- 278 Cluster Analysis and Confirmatory Factor Analysis of Questionnaire Results on Passengers' Time Perception of Airplane Emergency Evacuation  
(Yiyang LUO, V. N. Karazin Kharkiv National University; Chenchen Xu, Ghent University; Frank Witlox, Ghent University)

12:30 – 14:00

Lunch

14:00 – 15:30

Paper Session III

14:00 – 15:30 A3-1 Practical Research 3

Room: 001a

Chair: **Kurt Fuellhart** | Unison Consulting, Inc.

- 63 Diverging spatiotemporal response by diverse airports on COVID-19 based on air passengers: A case study in China  
(Yuting Chen, Ghent University; Kurt Fuellhart, Uniso Consulting; Tony Grubestic, University of Texas at Austin; Shengrun Zhang, Nanjing University of Aeronautics and Astronautics (NUAA); Frank Witlox, Ghent University)
- 98 Comparing Enhanced Models for Evaluating Economic Impact of Airports  
(Anderson Ribeiro Correia, Instituto Tecnológico de Aeronáutica; Ivaciane de Quadra Magalhaes, Instituto Tecnológico de Aeronáutica; Michelle Bandeira, Universidade Federal de Goiás; Luiz Antônio Tozi, Instituto Tecnológico de Aeronáutica; Mauro Zackiewicz, Instituto Tecnológico de Aeronáutica)
- 224 Airport Business Model Scenarios after COVID-19 Pandemic: Exploring the UK Air Transport Market  
(Ozlem Colak, Loughborough University; Marcus Enoch, Loughborough University; Craig Morton, Loughborough University)
- 307 Circular Economy Impacts: The Case of Schiphol Airport  
(Maria Baltazar, ISEC Lisbon; Ana Sofia Gomes, ISEC Lisbon)

Chair: **Thomas Standfuß** | Technical University Dresden

- 18 Towards a framework for ANSP sustainability strategy: Opportunities for further research (Francine Carron, Vrije Universiteit Brussel; Michael Carron, Vrije universiteit Brussel)
- 26 How to measure Traffic Variability? Analysis of traffic fluctuations on short- and medium-term basis (Thomas Standfuß, Technical University Dresden; Matthias Whittome, DFS Deutsche Flugsicherung GmbH)
- 266 How many air traffic controllers do we (actually) need? Rostering flexibility and its impact on staffing requirements and productivity of area control centres (Goran Pavlović, EUROCONTROL; Radosav Jovanović, University of Belgrade - Faculty of Transport and Traffic Engineering; Milan Stanojević, University of Belgrade - Faculty of Organizational Sciences)

Chair: **Andreas Wittmer** | University of St. Gallen

- 15 Pricing for sustainability: Analysing the demand-side steering effect of a flight ticket levy in Switzerland (Andreas Wittmer, University of St. Gallen; Nico Egli, University of St. Gallen)
- 148 Air travel demand forecasting using machine learning methods (Andrea Signori, University of Bergamo; Sebastian Birolini, University of Bergamo; Paolo Malighetti, University of Bergamo)
- 294 The impact of LCCs on tourism: a structural equation model applied to Europe (Flavio Porta, University of Bergamo; Gianmaria Martini, University of Bergamo; Christian Bontemps, TSE - Toulouse School of Economics)
- 333 Estimating willingness to pay for the reduction of the influence of airport disruption (Yukitsugu Kojiya, Tokyo Denki University; KAZUYUKI TAKADA, Tokyo Denki University; Yuta Arakawa, Tokyo Denki University)

Chair: **Xavier Fageda** | University of Barcelona

- 184 Corruption and Airport Efficiency: A study on Asia-Pacific airports (Laingo RANDRIANARISOA, Kedge Business School; Tae Hoon Oum, University of British Columbia; Chunyan Yu, Embry-Riddle Aeronautical University)
- 276 Unit rates, capacity choice, and regulation in air navigation service provision in the presence of congestion and market power (Thi Thuy An Vo, Worms University of Applied Sciences/Vrije Universiteit Amsterdam; Christiaan Behrens, Vrije Universiteit Amsterdam; Frank Fichert, Worms University of Applied Sciences; Eric Pels, Vrije Universiteit Amsterdam; Erik Verhoef, Vrije Universiteit Amsterdam)
- 306 Israel-EU Open Skies agreement and its implications on the air transportation and tourism sectors (Uzi Freund-Feinstein, Kinneret Academic College)
- 365 Flight Ticket Taxes in Europe: Environmental and Economic Impact (Xavier Fageda, University of Barcelona; Valeria Bernardo, Tecnocampus-UPF; Jordi Teixidó, University of Barcelona)

Chair: **Sven Buyle** | University of Antwerp

- 29 Expect the unexpected: how airports can prevent the unthinkable with soft skills  
(Lucia Piedade, Universidade Lusofona ; Helena Martins, Universidade Lusofona; Fernando Borba, Universidade Lusofona)
- 128 Activity based allocation modelling for developing landside use plan for regional tourist airports  
(Dimitrios DIMITRIOU, Democritus University of Thrace; ARISTI KARAGKOUNI, Democritus University of Thrace)
- 172 Business models for regional airports: Who is flourishing and who is threatened?  
(Jolien Pauwels, University of Antwerp; Sven Buyle, University of Antwerp; Wouter Dewulf, University of Antwerp)
- 301 Critical success factors for droneports and UAV test centres: an AHP approach  
(Sven Buyle, University of Antwerp; Peter Bulckaert, University of Antwerp; Wouter Dewulf, University of Antwerp; Thomas Van Asch, University of Antwerp)

15:30 – 16:00 Coffee Break

16:00 – 17:30 Paper Session IV

16:00 – 17:30 A4-1 Air Transport and COVID-19 3

Room: 001a

Chair: **Martin Dresner** | University of Maryland

- 132 A COVID resilience index for Singapore – Is it accurate to predict the future?  
(Matthew Yap, Embry-Riddle Aeronautical University)
- 195 Emerging from the Storm – Factors Affecting Regional Airport Recovery Prospects  
(Noel Hiney, Dublin City University; Dr Marina Efthymiou, Dublin City University; Professor Edgar Morgenroth, Dublin City University)
- 340 The effects of air transport mobility and global connectivity on viral transmission: Lessons learned from Covid-19 and its variants  
(Martin Dresner, University of Maryland; Li Zou, Embry-Riddle Aeronautics University; Youngran Choi, Embry-Riddle Aeronautics University)
- 363 The efficiency of Turkish airports: An analysis for pre, during and post Covid-19  
(Ferhan K. Sengur, Eskisehir Technical University; Ferhat Ince, Eskisehir Technical University)

16:00 – 17:30 A4-2 Airport Operations 1

Room: 001b

Chair: **Mikio Takebayashi** | Kobe University

- 42 Optimization of the airport sweep-up schedule against the volcanic ash fall  
(Mikio Takebayashi, Kobe University; Masamitsu Onishi, Kyoto University; Masato Iguchi, Kyoto University)
- 154 Air Traffic Delay Propagation and Root Cause Identification through Trajectory-Based Optimisation Analysis  
(Benjamin Tan, Singapore University of Technology and Design (SUTD); Peter Jackson, Singapore University of Technology and Design)
- 187 Urban Air Mobility Ground Infrastructure (Vertiport) Capacity: A Paper Review  
(Marcelo Guterres, Brazilian Aeronautics Institute of Technology (ITA); Rodrigo Costa, Brazilian Aeronautics Institute of Technology (ITA); Mayara Murça, Brazilian Aeronautics



Institute of Technology (ITA); Anderson Correia, Brazilian Aeronautics Institute of Technology (ITA))

275 Incorporating and Expanding Resilience Metrics on Airport Terminals in a Disrupted State: A Simulation Approach

(Guilherme Zapola, Instituto Tecnológico de Aeronáutica; Evandro Silva, Instituto Tecnológico de Aeronáutica; Claudio Alves, Instituto Tecnológico de Aeronáutica; Carlos Müller, Instituto Tecnológico de Aeronáutica)

16:00 – 17:30 A4-3 Intermodal Operations & Modal Competition 2 Room: 002

---

Chair: **Masamitsu Onishi** | Kyoto University

51 Multimodal Transport with Free Trade Zone: the case of sea-and-air transport  
(Masamitsu Onishi, Kyoto University; Mikio Takebayashi, Kobe University)

102 Approach of modeling passengers' commuting behavior for UAM traffic in Hamburg, Germany

(Jan Pertz, German Aerospace Center (DLR); Klaus Lütjens, German Aerospace Center; Volker Gollnick, Hamburg University of Technology)

254 Is there a competitive or cooperative relationship between airlines and railways? A case study in the Kansai area of Japan

(Kyoko Manaka, Ryutsu Keizai University; Satoru hashimoto, Teikyo University; Takao Goto, chuo University)

345 Evaluation of arterial transportation network structure through multilayer network analysis  
(Yuta Arakawa, Tokyo Denki University; KAZUYUKI TAKADA, Tokyo Denki University; Kanta Tsukuhiji, Tokyo Denki University)

16:00 – 17:30 A4-4 Sustainability in Air Transport 5 Room: 003

---

Chair: **Cherie Lu** | Chang Jung Christian University

96 The Impact of Climate Change on Trans-Pacific Flights

(Cherie Lu, Chang Jung Christian University; Kai-Hung Tu, Chang Jung Christian University; Yi-Chiao Huang, Chang Jung Christian University)

127 Airport Slots and Environmental Protection: Future 'Green' Slots for Europe?

(Tuvana Aras, Leiden University; Steven Truxal, Leiden University)

138 Improving flight efficiency and reducing emissions through demand-capacity balancing in European ATM

(Jan-Rasmus Künnen, WHU Otto Beisheim School of Management; Arne Strauss, WHU Otto Beisheim School of Management; Nikola Ivanov, University of Belgrade; Radosav Jovanovic, University of Belgrade; Frank Fichert, Hochschule Worms)

350 The enabling roles and temporal conditions in relation to the organized collective of institutional entrepreneurship in the aviation industry: Two Case Studies on Legacy Airlines in the Northeast Asia Region

(Benjamin Wu, Lingnan University)

19:00 – 22:00 Gala Dinner

Venue: Horta Art Nouveau Zaal - Hopland 2, 2000 Antwerpen

---

**SATURDAY, 27 AUGUST – Paper Sessions and Conference Closing Session**

07:00 – 08:30 Online Paper Session IV (broadcast not provided at venue)

#### 07:00 – 08:30 B4-1 Air Transport Demand 3

---

Chair: **Hiromichi Yamaguchi** | Kanazawa University

- 3 The digital optimization of flight schedule for Australian domestic aviation industry (Jiezhuoma La, RMIT University; Cees Bil, RMIT University; Iryna Heiets, RMIT University; Ken Lau, Qatar Airways)
- 135 Understanding air travelers' preferences for fare classes and families (Ching Wang, Feng Chia University; Chieh-Hua Wen, Feng Chia University)
- 182 Modeling the airport and airline choice behavior: The case study of multiple gateway airports connected by High-speed Railway (Hiromichi Yamaguchi, Kanazawa University; Mikio Takebayashi, Kobe University)
- 209 The impacts of policy uncertainty, COVID-19, and oil price shocks on US air travel demand (Junwook Chi, University of Hawaii, Manoa)

#### 07:00 – 08:30 B4-2 Air Transport and COVID-19 4

---

Chair: **Kashin Sugishita** | Tokyo Institute of Technology

- 119 Evaluating the Dynamic Operating Efficiency of Full-service Carriers and its Determinants under the Impacts of COVID-19 (Yi-Shih Chung, National Yang Ming Chiao Tung University; Yu-Hung Chen, National Yang Ming Chiao Tung University)
- 146 Disruption and recovery of the US domestic airline networks during the COVID-19 Pandemic (Kashin Sugishita, Tokyo Institute of Technology; Hiroki Mizutani, Tokyo Institute of Technology; Shinya Hanaoka, Tokyo Institute of Technology)
- 167 The Impact of COVID-19 Pandemic on Airlines' Route Entry and Exit - The Case of Chinese Domestic Market (Xiang ru Wu, University of International Business and Economics; Kun Wang, University of International Business and Economics; Xiaowen Fu, Hong Kong Polytechnic University; Tae Hoon Oum, University of British Columbia)
- 170 Evolution of international cargo charter flights under COVID-19 Pandemic impacted environment in China (Yangyang He, Sichuan University; Chuntao Wu, Sichuan University; Huiyu Yang, Sichuan University; Lei Peng, Air China)

#### 07:00 – 08:30 B4-3 Air Transport Policy & Regulation 4

---

Chair: **Changmin Jiang** | University of International Business and Economics

- 31 The Role of Export Credit on the Aviation Supply Chain (Changmin Jiang, University of International Business and Economics)
- 122 Pricing regime choices for international airports: per-flight versus per-passenger charges (Ming Hsin LIN, Osaka University of Economics)
- 133 A Pricing Versus Slots Game When the Non-locals Have Substitute Route Choices (Hao Lang, The Hong Kong Polytechnic University; Achim Czerny, The Hong Kong Polytechnic University)
- 239 Empirical analysis of codeshare effect on airline market competition and product quality (Longye Gao, University of Tokyo; Hiroshi Ohashi, University of Tokyo)

#### 07:00 – 08:30 B4-4 Airline Economics & Performance 3

---

Chair: **Kam To Ng** | The Hong Kong Polytechnic University

- 100 The impacts of Covid-19 on Low-Cost Carriers' Ancillary Revenues: a case study in Thailand

- (Narudh Cheramakara, King Monkut's Institute of Technology Ladkrabang; Seksiri Niwattisaiwong, Lancaster University)
- 257 Analysis of Airlines' Digital Platformer Business under the Two-Sided Market Model Approach  
(Katsuya Hihara, TMU/UTokyo)
- 343 The effect of airline bankruptcy on airline yield and frequency in a duopoly domestic aviation market  
(Kam To Ng, The Hong Kong Polytechnic University; Xiaowen Fu, The Hong Kong Polytechnic University; Chuanyang Zhu, The Hong Kong Polytechnic University)
- 346 The entry of Gulf carriers into the long-distance markets: the case of Australia-UK airway  
(Hanxiang ZHANG, The Hong Kong Polytechnic University; Christian Bontemps, TSE - Toulouse School of Economics; Ruowei Chen, Shanghai Aircraft Design and Research Institute; Achim Ingo Czerny, The Hong Kong Polytechnic University; Jos van Ommeren, VU University Amsterdam; Lei Zheng, Swinburne University of Technology)

---

#### 07:00 – 08:30 B4-5 Airport Operations 2

Chair: **Hideki Fukui** | Ehime University

- 147 A hybrid variable neighbourhood search for the adjustable robust gate assignment problem  
(Chenliang ZHANG, The Hong Kong Polytechnic University; Kam K.H. NG, The Hong Kong Polytechnic University)
- 166 Airport Infrastructure Requirements to Enable Hydrogen Aircraft  
(Yue Gu, University of South Australia; Mirjam Wiedemann, University of South Australia; Michael Evans, University of South Australia; Tim Ryley, Griffith University; Mary Johnson, Purdue University)
- 263 Estimating the effect of the tactical surface metering on fuel savings  
(Hideki Fukui, Ehime University; Chikage Miyoshi, Cranfield University)
- 327 Construction of Virtual-real Interaction Process of Aircraft Turnaround Operations Based on Digital Twin  
(Jiaxin Ji, Nanjing University of Aeronautics and Astronautics; Jing Lu, Nanjing University of Aeronautics and Astronautics; Weiwei Wu, Nanjing University of Aeronautics and Astronautics)

---

#### 07:00 – 08:30 B4-6 Airport Strategy & Management 3

Chair: **Gengling Dai** | Singapore University of Technology and Design

- 157 Research on overseas hub layout based on China's global aviation supply chain demand  
(Yi Peng, Beijing Jiaotong University; Junru Li, Beijing Jiaotong University; Xujuan Kuang, Civil Aviation Management Institute of China; Hongchang Li, Beijing Jiaotong University)
- 175 Improving the airport performance to overcome the pandemic crisis: A case of Taiwan international airports  
(James Liou, National Taipei University of Technology; Pedro Jose Gudiel Pineda, National Taipei University of Technology; Chao-Che Hsu, Tamkang University)
- 192 Bottleneck Analysis of Pre-Pandemic ASEAN Commercial Air Traffic Network  
(Gengling Dai, Singapore University of Technology and Design (SUTD); Wei Jun Benjamin Tan, Singapore University of Technology and Design; Peter Jackson, Singapore University of Technology and Design)
- 236 The Impacts of Regional Economic Development and Investments on the Air Cargo Market in China

(Yuxuan Wang, Inha University; Tae Seung Kim, Inha University)

07:00 – 08:30 B4-7 Aviation & Economic Development

---

Chair: **Yonglei Jiang** | Beijing Jiaotong University

- 1 Transport accessibility, colocation, land use policy and firm location patterns in airport economic zone: A comparison of spatial count and generalized linear approaches (Yonglei JIANG, Beijing Jiaotong University; Hongyu TANG, Beijing Jiaotong University; Zhongzhen YANG, Ningbo Univeristy)
- 41 Air connectivity and tourism: the development of urban tourism in China (Xingwu Zheng, Civil Aviation University of China; Yi Zhang, Civil Aviation University of China; Dingrong Liu, Civil Aviation University of China)
- 347 Passenger Recovery Problem with Flexible Tickets and Rerouting (Hanlin Wu, Beihang University; Sebastian Wandelt, Beihang University; Xiaoqian Sun, Beihang University)
- 354 Utilization of Alumni and Industry Feedback for The Curriculum Enhancement of a Cabin Maintenance Program of An Approved Training Organization (Noel Jaime, Philippine state College of Aeronautics / Institute of Graduate Studies; CECIEL JANE MALLORCA, PhilSCA Alumni Association; NOEL NAVIGAR, Institute of Graduate Studies (IGS); LEO MENDEL ROSARIO, Institute of Graduate Studies (IGS))

07:00 – 08:30 B4-8 Intermodal Operations & Modal Competition 3

---

Chair: **Chunan Wang** | Beihang University

- 160 The impact of high-speed rail on airline scheduling (Hongyi Gu, Hong Kong Polytechnic University; Yulai Wan, Hong Kong Polytechnic University)
- 193 Infrastructure competition between air transport and HSR: modelling and numerical analysis for Beijing-Shanghai (Yixiao Wang, Beijing Jiaotong University; Erik T. Verhoef, Vrije Universiteit Amsterdam; Eric Pels, Vrije Universiteit Amsterdam; Ruud H. Teunter, University of Groningen; Jianhong Wu, Beijing Jiaotong University; Luoyi Sun, Chinese Academy of Sciences)
- 233 Research on the Impact of High-speed Rail Competition on Civil Aviation Supply in China (ManYu Zhang, Beijing Jiaotong University)
- 334 Air-HSR competition: The role of airline's objective function (Chunan Wang, Beihang University)

08:30 – 12:00 Conference Registration

---

Venue: Entrance Foyer

09:00 – 10:30 Paper Session V

09:00 – 10:30 A5-1 Air Transport and COVID-19 5 Room: 001a

---

Chair: **Toon Zijlstra** | The Netherlands Institute for Transport Policy Analysis and University of Antwerp

- 230 Investigating the Impact of COVID-19 on Air Cargo Movements based on Gravity Models: A Case Study of Taiwan Taoyuan International Airport (Hsin-Hua Yang, National Yang Ming Chiao Tung University; Yi-Shih Chung, National Yang Ming Chiao Tung University)
- 304 Covid-19 and Airline Pricing: A Structural Model

(Andrea Gualini, University of Bergamo; Christian Bontemps, ENAC and Toulouse School of Economics; Gianmaria Martini, University of Bergamo)

- 349 What shapes the international air transportation in Africa? the evidence considering the impact of Covid-19  
(Yilin Zhang, University of British Columbia; Megersa Abate, The World Bank; Tommy Cheung, Swinburne University of Technology; Anming Zhang, University of British Columbia)
- 366 Will Dutch air passengers return after COVID-19?  
(Toon Zijlstra, The Netherlands Institute for Transport Policy Analysis and University of Antwerp; Gabrielle Uitbeijerse, The Netherlands Institute for Transport Policy Analysis)

---

09:00 – 10:30 A5-2 Airline Strategy & Management 3 Room: 001b

Chair: **Colin Law** | Singapore Institute of Technology

- 37 Towards improved Air Connectivity in the African Continent: Hurdles and Opportunities  
(Ola Shower, University of Antwerp; Wouter Dewulf, University of Antwerp; Yasmine Rashed, Arab Academy for Transport, Technology & Maritime Transport; Sven Buyle, University of Antwerp)
- 85 How airlines can use their raison d'être to deal with flight shaming: conditions and limits. The case of the definition of a raison d'être for a European Airline  
(Pauline ALESSANDRA, Université de Montpellier; Paul Chiambaretto, Montpellier Business School)
- 150 Disentangling the airline industry architecture: A cluster analysis of airlines' vertical strategies  
(Lars-Michael Wendel, University of Antwerp; Sascha Albers, University of Antwerp; Wouter Dewulf, University of Antwerp)
- 315 Exploring the Impact of Airlines Service Quality on Customer Satisfaction and Repurchase Intention: A Case Study of Myanmar  
(Colin Law, Singapore Institute of Technology; Yuhua Zhang, University of Southern Queensland)

---

09:00 – 10:30 A5-3 Marketing & Consumer Behavior in Air Transport 3 Room: 002

Chair: **Benny Mantin** | University of Luxembourg

- 156 Estimating Hub Traffic Share on the 'Kangaroo Route' via an Aggregate Itinerary Choice Model  
(Peter Jackson, Singapore University of Technology and Design (SUTD); Li Mingmei, Singapore University of Technology and Design (SUTD))
- 171 Analyzing global passenger flows based on choice modelling in the air transportation system  
(Katrin Koelker, German Aerospace Center (DLR); Klaus Luetjens, DLR (German Aerospace Center); Volker Gollnick, Hamburg University of Technology (TUHH))
- 179 Comparative analysis of changes in passenger's perception for airline's service quality before and after COVID-19 using topic modeling  
(Do Hun Kim, Inha University; Chae Hwan Lim, Inha University; Hyun Moon, Inha University; Hun Koo Ha, Inha University)
- 364 Shopping or dining? The effect of passenger dwell time on airport revenues  
(Benny Mantin, University of Luxembourg; You Wu, University of Luxembourg; Chiara Morlotti, University of Bergamo)

---

09:00 – 10:30 A5-4 Sustainability in Air Transport 6 Room: 003

Chair: **Viktoriia Myroniuk** | The University of Salford

- 124 Aviation CO2 emissions KPIs through literature review and Industry benchmark  
(Luis MARTIN-DOMINGO, Ozyegin University; Juan Carlos MARTIN, Universidad de Las Palmas de Gran Canaria)
- 183 Airports and climate change: measuring adaptive capacity  
(Asimina Voskaki, Cranfield University; Thomas Budd, Cranfield University; Keith Mason, Cranfield University)
- 196 Benchmarking Analysis of Airline Catering Based on the United Nations Sustainable Development Goals  
(Viktoriia Myroniuk, The University of Salford)
- 208 Airport Sustainability Evaluation: An Apply Case of Amsterdam Schiphol Airport Using a Composite Indicator Approach  
(Xibei JIA, University of Antwerp; Sven BUYLE, University of Antwerp; Rosário Macário, University of Antwerp)

10:30 – 11:00 Coffee break

11:00 – 12:00 **ATRS General Assembly**

Room: Foyer

12:00 – 12:15 **Conference Closing**

Room: Foyer