



4th GARS Summer School 2023

Friday, Saturday & Sunday, 9, 10 and 11 June 2023

Hogeschool van Amsterdam

GARS and the Hogeschool van Amsterdam are happy to host the 4th GARS Summer School 2023, which is supported by the Air Transport Research Society, the Bremen University of Applied Sciences, The Hong Kong Polytechnic University and airliners.de. Building on the previous Summer School we will have a series of lectures on the core concepts of aviation economics and management, such as airline management, air traffic management, benchmarking of airports, economic regulation, environmental economics, and policy. This year we will focus extensively on airline strategy and management. Ian Douglas (University of New South Wales Sydney) will lecture on airline strategy. The school starts right after the 20th GARS Junior Workshop.

4th GARS Summer School 2023

PROGRAMME

Lecturers	Topic	Time CEST
Friday, 9 June		
Ane Elixabete Ripoll- Zarraga Universitat Autònoma de Barcelona (UAB)	Airlines' Financial Analysis for Decision-Making	14.00 – 15.30
Ian Douglas University of New South Wales Sydney	Airline Strategy I: Airline Commercial Management	15.30 – 17.00
Dinner at your own expense. Place TBA		
Saturday, 10 June		
Cathal Guiomard, Dublin City University (DCU)	Airport Ownership, Finance, and Investment	9.00 - 10.00
Achim Czerny, Hong Kong Polytechnic University	Modelling airport networks for theoretical policy analyses	10.00 – 11.00
Gerben de Jong VU Amsterdam	Overview of research on Frequent Flier Programs	11.00 – 12.00
Lunch		
Presentation of Posters		
Xiaoqian Sun, Beihang University	COVID-19 Pandemic and Air Transportation	13.00 – 14.00
Frank Fichert UAS Worms German Aerospace Center (DLR)	Aviation & the Environment	14.00 – 15.30
Ian Douglas University of New South Wales Sydney	Airline Strategy II: Fleet Management	15.30 – 17.30

Dinner at your own expense. Place TBA		
Sunday, 11 June		
Ian Douglas University of New South Wales Sydney	Airline Strategy III: TBA	9.00 -11.00
Hans-Martin Niemeier Bremen City UAS	Airport Costs and Market Structure	11.00-12.30
Break		
Catya Zuniga Hogeschool van Amsterdam	How to manage by performance: the turnaround operations	13.00-14.30

The summer school will start right after the 19th GARS Junior Research Workshop 9-10 June 2022, and will end on Sunday at 15.00 at the latest.

Venue: Amsterdam University of Applied Sciences

Hogeschool van Amsterdam (7-10 June), Wibauthuis, Wibautstraat 3b, 1091 GH Amsterdam

Hogeschool van Amsterdam (11 June), Müller-Lulofshuis, Wibautstraat 5a, 1091 GH Amsterdam

Closed by hotels are: Volkshotel, Wibautstraat 150; CitizenM, Sarphatistraat 47; Hotel Allure, Sarphatistraat 117; Hyatt Regency, Sarphatistraat 104

Participation is free of charge, but the organizers highly encourage all Summer School participants to become members of the German Aviation Research Society. The membership form can be found online.

Please, register <https://www.amsterdamuas.com/aviation/form/subsites/aviation/en/2023/gars-workshop-2023.html?origin=b2b39df4-61a3-48f7-8ecb-4a1865155e51>

Contact for further details:

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For updates visit <http://www.garsonline.de>

Your lecturers (in alphabetic order)



Dr **Achim I. Czerny** is an Associate Professor at the Department of Logistics and Maritime Studies (LMS), Hong Kong Polytechnic University, Director of a new academic program in Aviation Management and Logistics, and Editorial Board Member of the Journal of the Air Transport Research Society, Journal of Shipping and Trade, and Transport Policy. Achim studied Economics at TU Berlin and holds a doctoral degree in Economics from TU Berlin. Previously Achim worked as a researcher at the VU University of Amsterdam, Department of Spatial Economics, and Assistant Professor of Regulatory Economics at the WHU – Otto Beisheim School of Management. Achim was the head of the local organizing committee of the International Transportation Economics Association (ITEA) School and conference hosted by LMS in 2018. Achim is a member of the Scientific Advisory Board of the European Aviation Conference, an executive committee member of the Air Transport Research Society (ATRS) and a board member of the German Aviation Research Society (GARS). Achim has published numerous research papers in transportation journals and economics journals. He was awarded the Best Overall Paper Prize of the ITEA Conference on Transportation Economics 2014 (with Professor Anming Zhang) and the Certificate of Excellence in Reviewing from Transportation Research Part B in 2013 and Transportation Research Part D in 2022.

About the session: *Modelling airport networks for theoretical policy analyses*

More than in almost any other transport industry, air transport is connected globally. This session provides an overview of theoretical studies considering network structures involving two or more airports. Beyond conveying study results, the goal is to offer guidance on how to cover from the theoretical perspective and to analyse specific issues most effectively. Effectiveness is measured as the complexity needed to address those issues.

Recommended readings

- Czerny, A.I. and Lang, H. (forthcoming). Modelling airport networks for theoretical policy analyses. *Journal of the Air Transport Research Society*.



Dr **Gerben de Jong** is a Rubicon postdoctoral fellow at the Hebrew University of Jerusalem. He obtained his master's degree in Transport and Supply Chain Management at VU Amsterdam. Gerben holds an interdisciplinary PhD thesis (2019) at the Department of Marketing and Spatial Economics. Gerben is also affiliated as a Visiting Fellow with the Department of Spatial Economics at the VU Amsterdam, a Senior Research with SEO Amsterdam Economics, and is the

program manager of Airneth. Gerben's research focuses on aviation and advanced econometric models to improve industry organisation given conflicting economic, environmental, and social interests. He conducts economic research and advice governments, companies and (international) organisations on competition, regulation, innovation, sustainability, and transportation.

About the session: *Overview of research on Frequent Flier Programs*

Based on a working paper, I will introduce the core ideas of frequent flier programs and the academic research conducted on these programs.

Recommended readings:

- Behrens, C., De Jong, G. & van Ommeren, J. (2021). *From Silver to Platinum: the effect of frequent flier tier levels on airline demand*. Tinbergen Institute Discussion Paper 2021- 077/VIII
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3914811



Dr **Ian Douglas** ended his latest term as Chairperson of the Australian International Air Services Commission (IASC) in August 2021. He served as a member of the Commission, responsible for the allocation and management of capacity for international services operated by Australian carriers, from 2012. Ian holds a Doctorate in Business Administration and a postgraduate qualification in Higher Education. From July 2007 to August 2019, Ian was a Senior Lecturer in Aviation Management at the University of New South Wales (UNSW), and before taught strategy at the Graduate School of Business at the University of Technology, Sydney. Ian was recently appointed as a Fellow of the Air Transport Research Society and is a Senior Fellow at the University of Wollongong. Before academia, Ian held senior roles in pricing, business development, route management, and strategic planning at Qantas Airways. He spent several years in London in a regional marketing role and subsequently led business development for the joint venture with British Airways. Ian has consulted several companies, including Malaysia Airlines, Thai Airways International, Cyprus Airways, Hainan Airlines and HNA Airports. He contributes regularly to aviation management programs at the Singapore Aviation Academy, has delivered aviation vocational programs for UNESCO in Hong Kong, and represented the Air Transport Research Society at the ICAO Air Transport Symposium in 2019.

About the sessions: *Airline Strategy I: Airline Commercial Management, Airline Strategy II: Fleet management, Airline Strategy III: TBA*

The strategy lectures will assess the shift in competitive advantage that has emerged with covid19. Weakened hub specialists and favoured those with large domestic networks. An interesting shift in key success factors

Recommended readings

No readings are required since we will cover the required information and learning outcomes in the lectures and activities. There will be an expanded fleet/schedule scenario. After the lecture content in the second session on Saturday, we will break you up to run the aircraft costing simulation. The task has values for two aircraft types (A320/E190), and the idea is to decide the tentative best option to fly on the city pairs outlined.



Prof. Dr **Frank Fichert** is Professor in Economics and Transport Economics at Worms University of Applied Sciences (UAS). His PhD Thesis, which he finished in 1999 at Mainz University, analyses different policy instruments for reducing negative externalities from air transportation. Frank worked as managing director of the Research Institute for Economic Policy at Mainz (1999-2004) and as Professor for Economics and Air Transportation at Heilbronn University of Applied Sciences (2004- 2009). Frank has published several papers on the transport sector and is co-author of the leading German textbook on air transport management. He is a member of the Competence Centre Aviation Management at Worms UAS and program director of the bachelor's degree program "Aviation Management and Piloting". He has participated in several applied research projects, including the H2020 projects COCTA and CADENZA, the German Aviation Benchmarking study and the report on the market power of Amsterdam Airport, as well as projects commissioned by Federal and State Ministries in Germany. His research focuses on competition and regulation in the air transport industry and the environmental issues of aviation.

About the session: *Aviation & the Environment*

The session will provide an overview of environmental topics in aviation with a particular focus on climate change. Different instruments -in particular- the interaction between these instruments will be analysed.

Recommended readings

•Fichert, F., Forsyth, P. & Niemeier, H.-M. (Eds.) (2020). *Aviation and Climate Change. Economics Perspectives on Greenhouse Gas Reduction Policies* Abingdon, New York: Routledge. Chapter four.



Dr **Cathal Guiomard** is a Lecturer in aviation management at the Dublin City University (DCU) Business School in Ireland. Cathal holds a PhD in economics from University College Dublin and an M.Phil. from Oxford University. He has published papers in *Transportation Research Part A*, *Journal of Air Transport Management*, *Journal of Transport Economics and Policy*. His co-authored book on Airport Economics has just been published by Routledge. Until 2014, he was chief executive of Ireland's Commission for Aviation Regulation, setting price caps on Dublin airport and the Irish ATC company, licensing airlines, enforcing the EU passenger rights regime, and applying the EU slots regulations.

About the session: *Airport Ownership, Finance, and Investment*

The lecture discusses the relationship between airport ownership, on the one hand, and airport efficiency and service quality, on the other. Changing ownership patterns and their records are reviewed. Without sufficient airport competition, greater efficiency may primarily benefit owners not customers. Improvements in efficiency and service quality are likely to require large-scale investments. The evaluation and financing of possible investments are also discussed.

Recommended readings

- Adler, N, V Liebert (2014). Joint Impact of Competition, Ownership Form and Economic Regulation on Airport Performance and Pricing. *Transportation Research Part A*, 64, pp. 92–109.
- Flyvbjerg, B, N Bruzelius and W Rothengatter (2003). *Megaproject and Risk*. Cambridge UK, Cambridge University Press
- Vickers, J (1997). Economic Perspectives on privatization. *The Journal of Economic Perspectives*, Vol. 5 No. 2, pp. 111-132.



Prof. Dr **Hans-Martin Niemeier** is a Director of the Institute for Transport and Development at Bremen University of Applied Sciences. Hans-Martin is Chairman of the German Aviation Research Society (GARS), managing member of the Advisory Board of the European Aviation Conference and Chair of the COST Action “Air Transport and Regional Development” (ATARD). He led the research projects “German Airport Performance” and “German Aviation Benchmarking” and studies “Airport benchmarking by economic regulators”, “Market power of Amsterdam airport” for the Netherlands Competition Authority and “Comparative study (benchmarking) of the efficiency of Advisor’s airport operations” for the Norwegian Ministry of Transport and Communication. From 2014 to May 2019 Hans-Martin was a member of the Performance Review Body of the Single European Sky. He has published on privatization, regulation and competition of airports, the reform of slot allocation and airline and airport alliances.

About the session: *Airport Costs and Market Structure*

This lecture reviews the theoretical and empirical literature on airport costs in the short and long run. Airports have costs differing from those of firms in markets that are competitive. Recent studies suggest that even at airports with 80 million passengers per annum, economies of scale -and scope- can still be realised. Hence, airports are natural monopolies in many but not all local markets.

Recommended readings

- Bottaso, A and M Conti (2017). The cost structure of the airport industry: methodological issues and empirical evidence. In (Eds). Bitzan, J D & Peoples, J. H., *The Economics of Airport Operations*, 6, pp. 181-212, Bingley, Emerald Publishing Ltd.
- Forsyth, P, C. Guiomard and H-M Niemeier (2023). *Airport Economics*, Routledge forthcoming, chapter 3.
- Martín, J C and A Voltes-Dorta (2011). The dilemma between capacity expansions and multi-airport systems: Empirical evidence from the industry’s cost function. *Transportation Research Part E*, 47, pp. 382-389.



Dr **Ane Elixabete Ripoll-Zarraga** is a Senior Lecturer in Accounting and Auditing at the Universitat Autònoma de Barcelona (UAB). Ane holds a PhD in Entrepreneurship and Management (Cum Laude) with International and Industrial mentions from the same institution and is a Fellow of the Advance Higher Education in the UK (FHEA) and preparing for the Senior Fellowship Award as per her role in professional development and acting as an External Examiner for the UK Institutions. Ane holds the Extraordinary Doctorate Award for her research impact on decision-making, industrial engagement, the robustness of data, and model findings. Previously Ane lectured at the London School of Economics (LSE) in degrees and postgraduate programmes. Ane is an experienced senior external auditor and consultant in financial reporting, financial-management accounting, and auditing. Ane audits projects funded by the European Commission in higher and further education and environmental impact since 2014. Her research interests refer to operations management and benchmarking analysis (efficiency) with parametric (SFA) and non-parametric models (DEA). Ane is a reviewer in highly ranked journals such as the *European Journal of Operational Research*, *Journal of Air Transport Management*, *Transport Policy*, and *Transportation Science*. Ane publishes in prestigious journals such as *Annals of Operational Research*, *Annals of Tourism Research* and *Transport Policy*. As an auditor, Ane highlights the requirement to critically assess public data -in particular- for international benchmarking. I.e., to question the accounting information from a critical perspective according to the specific regulatory national framework and accounting policies such as depreciation methods.

About the session: *Airlines' Financial Analysis for Decision-Making*

We will review basic financial accounting concepts to understand a balance sheet, income statement, and cash-flow statement. We will review a specific case study to understand insights behind the financial information for relevant decision making.

Recommended readings

- International Accounting Standards (IAS). Available at: <https://www.iasplus.com/en/standards/ias>: IAS 16 Property, Plant and Equipment, IAS 36 Impairment. Available at: <https://www.iasplus.com/en/standards/ias/ias16>, IAS 37 Provision, Contingent Liabilities and Contingent Assets. Available at: <https://www.ifrs.org/issued-standards/list-of-standards/ias-37-provisions-contingent-liabilities-and-contingent-assets/>, IAS8 Accounting Policies, Changes in Accounting Estimates and Errors. Available at <https://www.iasplus.com/en/standards/ias/ias8>
- International Financial Reporting Standards (IFRS). Available at: <https://www.ifrs.org/issued-standards/list-of-standards/>.
- Ripoll-Zarraga, A.E. (2018). *The Spanish airport system: A critical assessment of the impact of AENA's managerial decisions on airports' technical efficiencies*. Doctoral Thesis chapter one, pp. 17-53. Available at <https://www.tdx.cat/handle/10803/665608>



Dr Xiaoqian Sun is a Professor with the National Key Lab of CNS/ATM, School of Electronic and Information Engineering at Beihang University, Beijing, China. She holds a PhD from Hamburg University of Technology (2012) and Master's and BSc degrees from North-western Polytechnic University (2008 and 2005). Xiaoqian research interests mainly include Air Transportation Network Design and Optimization, Contagion Spreading via Transportation Systems, and Resilience of Complex Systems. She is the author/co-author of 3 books and over 100 papers, many of which appeared in internationally recognized top-level journals, such as *Transportation Science*, *Transportation Research Part A/B/C/E*, *IEEE Transactions on Intelligent Transportation Systems*, and *Computers & Operations Research*. Xiaoqian is a Theodore von Kármán fellow of RWTH Aachen University, a fellow of the Technical University of Dresden, and an Executive Committee member of ATRS (Air Transport Research Society) and ALICANTO (International Association of Aviation and Aerospace Education). She also serves as the CoEIC of the Journal of ATRS, an Associate Editor of IEEE Transactions on Intelligent Transportation Systems, and an Associate Editor of the Journal of Air Transport Management (for more information, see the webpage: <http://m3nets.de/group/xs.html>)

About the session: COVID-19 Pandemic and Air Transportation

This session discusses the unprecedented impacts of the COVID-19 pandemic on our society, among which air transportation is one of the most hit industries. Air transportation is a two-edged sword in the global spread of contagious diseases: On one hand, it suffered the most due to the consequences of the pandemic outbreak; on the other hand, it also significantly contributed to the risks of spreading diseases worldwide. Also, the challenges and potential of containing a global health threat using strict aviation policies will be discussed.

Recommended readings

- Sun, X., Wandelt, S. and Zhang, A. (2021). On the degree of synchronization between air transport connectivity and COVID-19 cases at worldwide level. *Transport Policy*, 105, pp. 115- 123.
- Sun, X., Wandelt, S. and Zhang, A. (2021). Technological and Educational Challenges Towards Pandemic-Resilient Aviation. *Transport Policy*, 114, pp. 104-115.
- Sun, X., Wandelt, S. and Zhang, A. (2022). STARTUPS: Founding airlines during COVID-19 - a hopeless endeavor or an ample opportunity for a better aviation system? *Transport Policy*, 118, pp. 10-19.
- Wandelt, S., Sun, X. and Zhang, A. (2023). On the contagion leakage via incoming flights during China's aviation policies in the fight against COVID-19. *Journal of Air Transport Management*, 108, pp. 102337.
- Sun, X., Wandelt, X. Zheng, Ch. and Zhang, A. (2021). COVID-19 pandemic and air transportation: Successfully navigating the paper hurricane. *Journal of Air Transport Management*, 94, p. 102062.



Dr **Catya Zuniga** holds a PhD in Telecommunication and System Engineering (Cum Laude) and a M.Sc. in Industrial Informatics from the Universitat Autònoma de Barcelona (UAB). Catya performed postdoctoral studies in the Applied Mathematics Laboratory at the French Civil Aviation University (ENAC). Catya has a B.Sc. Mechanic Engineering from the Autonomous Metropolitan University (Mexico), a Mechanical Specialisation degree from the National Polytechnic Institute of Mexico and a Superior Educational Diplomat. Katya has worked for the last few years as a researcher at diverse universities around the world, e.g., the Aeronautical University in Queretaro (Mexico), the French Civil Aviation University (France), and the Autonomous University of Barcelona (Spain), among others. She is working as Associate-Professor at Amsterdam University of Applied Science and lectures courses related to the logistic and operational side of aviation on the airspace and airport side, air traffic management, modelling and simulation and operation research. She has participated in some international projects founded by Mexican and European institutions and produced publications in high-quality research journals and congresses related to the airport and air traffic management field. Catya's research interests focus on developing strategic and tactical airport and air traffic management tools and strategies to improve aviation operations performance using innovative operational concepts aligned with the international standards and recommendations of ICAO and Eurocontrol.

About the session: *How to manage by performance: the turnaround operations*

In this session, you will learn about the main principles and elements of the Performance-based approaches (PBA) and Collaborative Decision-Making (CDM) and one of its most successful implementation, the European Airport Collaborative Decision-Making called A-CDM.

Recommended readings

- Hale, J. & Gilmore, E. R. Performance-Based Management: What Every Manager Should Do to Get Results. *Performance Improvement*, Vol. 44 No. 10, pp. 45-47.
- Helm, S., Loth, S., & Schultz, M. (2015, July). Advancing total airport management—An introduction of performance-based management in the airport context. In *Proceedings of the 19th ATRS World Conference* (Singapore), pp. 2-5.
- Selviaridis, K., Wynstra, F. (2015). Performance-based contracting: a literature review and future research directions. *International Journal of Production Research*, Vol. 53 No. 12, pp. 3505–3540.
- Van Helden, G. J., & Johnsen, A. (2002). A comparative analysis of the development of performance-based management systems in *Dutch and Norwegian local government*. *International Public Management Journal*, Vol. 5 No. 1, pp. 75-95.
- Zuniga, C., & Boosten, G. (2020). A practical approach to monitor capacity under the CDM approach. *Aerospace*, Vol. 7 No. 7, p. 101.