

RECENT PUBLICATIONS

- Carreira, J.S., Lulli, G., Antunes, A.P., "The airline long-haul fleet planning problem: The case of TAP service to/from Brazil", *European Journal of Operational Research* 263(2), 639-651, 2017.
- Cavadas, J., Antunes, A.P., "An optimization model for integrated transit-parking policy planning", *Transportation*, <https://doi.org/10.1007/s11116-018-9905-4>, 25 p. (online 06 July 2018).
- Dantas, T.M., Oliveira, F.L.C., Repolho, H.M.V., "Air transportation demand forecast through Bagging Holt Winters methods", *Journal of Air Transport Management* 59, 116-123, 2017.
- Dias, D., Amorim, J.H., Sá, E., Borrego, C., Fontes, T., Fernandes, P., Pereira, S.R., Bandeira, J., Coelho, M.C., Tchepel, O., "Assessing the importance of transportation activity data for urban emission inventories", *Transportation Research Part D: Transport and Environment* 62, 27-35, 2018.
- Dias, D., Tchepel, O., "Spatial and temporal dynamics in air pollution exposure assessment", *International Journal of Environmental Research and Public Health* 15(3), 558, 2018.
- Gama, C., Monteiro, A., Plo, C., Miranda, A.I., Baldasano, J.M., Tchepel, O., "Temporal patterns and trends of particulate matter over Portugal: a long-term analysis of background concentrations", *Air Quality, Atmosphere and Health* 11(4), 397-407, 2018.
- Huang, K., Correia, G.H.A., An, K., "Solving the station-based one-way carsharing network planning problem with relocations and non-linear demand", *Transportation Research Part C: Emerging Technologies* 90, 1-17, 2018.
- Liang, X., Correia, G.H.A., Van Arem, B., "Applying a Model for Trip Assignment and Dynamic Routing of Automated Taxis with Congestion: System Performance in the City of Delft, The Netherlands", *Transportation Research Record*, 0361198118758048, 2018.
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- Nieuwenhuijsen, J., Correia, G.H.A., Milakis, D., B van Arem, Van Arem, B., "Towards a quantitative method to analyze the long-term innovation diffusion of automated vehicles technology using system dynamics" *Transportation Research Part C: Emerging Technologies* 86, 300-327, 2018.

EDITORIAL

Dear Reader,

Once again our national system of R&D centres is under a major evaluation exercise that is expected to produce results by the end of this year. These results will fix the rules for the allocation of the FCT funding to each Centre over the next five years. It's the third time CITTA will be under evaluation. Let's hope the assessments are fair and transparent and the different evaluation panels are able to reward those Centres who produced, in the recent past, top level research and, at the same, are better prepared to face the research challenges ahead.

With our mind into the future, it is perhaps interesting to notice the significant evolution that took place over the last decade in our Centre, and surely in some other research centres in Portugal. Let me start by quoting a paragraph I wrote a decade ago in the Editorial of the second issue of this newsletter (from October 2007):

"In the previous cycle (I was referring to the first half of the 2000s), most of our research centres invested in their own academic staff. And the first step was to obtain a PhD degree and hire young researchers with MSc. The next cycle will be fundamentally different. Most of our permanent staff is getting older and the then young researchers are finalizing their PhD. This new generation of PhD researchers, not necessarily engaged in academic carriers, requires adequate and stable working conditions."

Indeed, some eleven years ago to be more precise, entering what I then called our "second cycle", the main concern was with the future of our research and of our younger researchers with a PhD, who later on became *postdocs*. This challenge was overcome through our capacity to engage in successive waves of research projects of a fundamental and applied nature (even throughout the peak of the economic crises, 2010 - 2014), taking advantage of some research funding opportunities opened by the FCT and the EU, as well as by industry and national and regional public authorities.

Since last year, CITTA moved into the "third cycle" of its existence, showing a strong commitment to take advantage of the so-called "scientific employment" (a concept introduced by the present government), by starting to hire experienced researchers on more stable pluriannual contracts, almost equivalent to assistant professor contracts. At the time of writing, CITTA counts already with two such researchers, a new contract is in the way, and two other contracts are likely to be signed before the end of the year.

If this very positive evolution towards a more matured and consolidated Centre is not exclusive to CITTA, the genuine option for pluri and interdisciplinary research on cities and transports seems to remain unique within the small group of Portuguese R&D Centres with which we have more affinities. Indeed, it came as a great disappointment to verify that the CITTA was the only R&D centre that opted for the *Cities and Sustainable Mobility* Evaluation Panel. In these circumstances this thematic area, elected by the FCT as a national priority area, and rightly so, had to be withdrawn in accordance to the present regulations which require a minimum of four applications in each panel. In conclusion and, once more, our research centre will be evaluated by a scientific panel that, at its best, would only be familiar with a small proportion of the research carried out in the Centre. Let's hope that the complementary mechanisms included in the evaluation regulations to account for cases such as ours, are correctly applied in practice, ensuring fairness and transparency.

A final word to announce the 11th CITTA conference that will take place in Coimbra on the 24th of October under the general theme of *The Portuguese-Speaking Area and the Future of Cities*. It is the first time that our annual conference addresses the opportunities and challenges of city and transport planning in the context of the countries which share in common the Portuguese language. The conference will be closely articulated with another important event, the PLURIS - 8^o Congresso Luso-Brasileiro para o Planeamento Urbano, Regional, Integrado e Sustentável.

RECENT PUBLICATIONS

- Peres, I.T., Repolho, H.M., Martinelli, R., Monteiro, N.J., "Optimization in inventory-routing problem with planned transshipment: A case study in the retail industry", *International Journal of Production Economics* 193, 748-756, 2017.
- Pinto, N., Antunes, A.P., Roca, J., "Applicability and calibration of an irregular cellular automata model for land use change", *Computers, Environment and Urban Systems* 65, 93-102, 2017.
- Repko, M.G.J., Santos, B.F., "Scenario tree airline fleet planning for demand uncertainty", *Journal of Air Transport Management* 65, 198-208, 2017.
- Repolho, H.M., Marchesi, J.F., Júnior, O.S.S., Bezerra, R.R.R., "Cargo theft weighted vehicle routing problem: modeling and application to the pharmaceutical distribution sector", *Soft Computing*, 1-18, 2018.
- Ribeiro, N.A., Jacquillat, A., Antunes, A.P., Odoni, A.R., Pita, J.P., "An optimization approach for airport slot allocation under IATA guidelines", *Transportation Research Part B: Methodological* 112, 132-156, 2018.
- Santos, B.F., Wormer, M.M.E.C., Achola, T.A.O., Curran, R., "Airline delay management problem with airport capacity constraints and priority decisions", *Journal of Air Transport Management* 63, 34-44, 2017.
- Teixeira, J.C., Bigotte, J.F., Repolho, H.M., Antunes, A.P., "Location of Courts of Justice: The Making of the New Judiciary Map of Portugal", *European Journal of Operational Research*, <https://doi.org/10.1016/j.ejor.2018.06.029> (online 26 June 2018).
- Vasconcelos, A.S., Martinez, L.M., Correia, G.H.A., Guimarães, D.C., Farias, T.L., "Environmental and financial impacts of adopting alternative vehicle technologies and relocation strategies in station-based one-way carsharing: An application in the city of Lisbon, Portugal", *Transportation Research Part D: Transport and Environment* 57, 350-362, 2017.
- Wang, Y., Correia, G.H.A., Van Arem, B., Timmermans, H.J.P.H., "Understanding travellers' preferences for different types of trip destination based on mobile internet usage data", *Transportation Research Part C: Emerging Technologies* 90, 247-259, 2018.
- Zeferino, J.A., Cunha, M.C., Antunes, A.P., "Adapted optimization model for planning regional wastewater systems: Case study", *Water Science and Technology* 76(5-6), 1196-1205, 2017.

RECENT CONTRACTS

- ASAP: Airport Slot Allocation Processes: Advances in Current Guidelines and Practices (POCI-01-0145-FEDER-029725). Start: June 2018.
- Driving2Driverless: Urban and regional transport management under a scenario of shared electric fully automated mobility (POCI-01-0145-FEDER-31923). Start: July 2018.
- ISY-AIR - An integrated system for urban scale air quality assessment and forecast (MIT-EXPL/IRA/0023/2017). Start: September 2018.
- WSmartRoute: Waste Collection based on a Real Time Route Planning System (MIT-EXPL/SUS/0132/2017). Start: September 2018.

RESEARCH GROUP 3

The call for abstracts is now open and the deadline is the 15th of September. Given the particular theme of this year's conference, abstracts, papers and presentations will be accepted in both Portuguese and English language.

Paulo Pinho

Despite the size of the Transport Analysis and Planning (TAP) group has remained practically unchanged since our last contribution to CITTA's Newsletter, the level and outcome of our activity has significantly improved. This is in particular attested by the 22 journal articles published by members of the group in the year 2017 and in the first half of 2018, many of them in leading journals such as *Transportation Research B, C, and D*, *International Journal of Sustainable Transportation*, *Journal of Air Transport Management*, *Journal of Transport Geography*, and *Transportation*. In this report, I will highlight the work we are doing in our three main research areas, as well as the perspectives we have for their development in the near future.

To begin with, I will focus on our research on traffic-related air pollution. In recent years, this research has essentially taken place in the framework of the TRAPHIC project (TRAPHIC stands for Traffic Related Air Pollution impacts on Historic City centres: An Integrated Approach), which is coordinated by Prof. Oxana Tchepel with the help of post-doc researcher Daniela Dias. This project is enabling us to expand previous work on the connection between motorized traffic, emissions and air pollution, as well as addressing its impacts on people's health and buildings' condition. A new (exploratory) project in a related topic is about to start funded by the MIT Portugal Program: ISY-AIR. The team investigating this subject was recently enlarged with a new PhD student, Noela de Pina, who has defended her thesis project a few days ago.

The second of our main areas is concerned with urban mobility. In this area, we have been investigating new urban transport modes and technologies, such as car sharing, shared taxis and automated vehicles, and their impacts on city life, as well as the relationship between public transport and parking. The latter was the subject of Joana Cavadas's PhD thesis, presented last month. In the next three years, the main activity in this area will be carried out within *Driving2Driverless*, a COMPETE 2020 project recently approved. This project, coordinated by Prof. Gonçalo Correia, addresses the management challenges posed by a shared electric automated mobility system, thus unifying and integrating research that in the past we have conducted separately for each subsystem.

The other focus area I will mention here is air transport planning. As always since this subject started to be pursued in CITTA a little more than ten years ago, we have been working with both airline planning and airport planning. With regard to the former, I want to underline the PhD thesis on strategic fleet planning by Joana Carreira, also presented last month. Her work will be continued by a new PhD student, André Gomes, who is about to submit a thesis project on integrated strategic network-fleet planning. On the airport planning side, our research in recent times has been mainly devoted to slot allocation, and is being developed in close collaboration with Profs. Amedeo Odoni (MIT) and Alexandre Jacquillat (Carnegie Mellon U.). In the following three years, this activity will mainly take place in the framework of the ASAP project, also funded by the COMPETE 2020 Program. The kick-off meeting of this project, scheduled for next October in Lisbon, will gather leading academic researchers and experts from the main industry stakeholders (e.g., IATA, ACI and WWACG), offering an excellent opportunity to further increase the visibility of CITTA's research in air transport planning.

Finally, I would like to mention in this newsletter the position obtained by the University of Coimbra in the 2018 edition of the Shanghai ranking for the subject "Transportation Science and Technology". It is placed in the level 51-75 worldwide, being only outperformed by eight European universities. Without the contribution of CITTA's TAP group, this excellent result would certainly have been impossible.

António Pais Antunes