

## RECENT PUBLICATIONS

- Cavadas, J., Correia, G. and Gouveia, J. (2015) 'A MIP model for locating slow-charging stations for electric vehicles in urban areas accounting for driver tours', *Transportation Research Part E: Logistics and Transportation Review* 75, 188-201.
- Correia, G. and Van Arem B. (2016) 'Solving the User Optimum Privately Owned Automated Vehicles Assignment Problem (UO-POAVAP): A model to explore the impacts of self-driving vehicles on urban mobility', *Transportation Research Part B: Methodological* 87, 64-88.
- Demissie, M., Correia, G. and Bento, C. (2015) 'Analysis of the pattern and intensity of urban activities through aggregate cellphone usage', *Transportmetrica A: Transport Science* 11, 502-24.
- Dias, D., Tchepel, O. and Antunes, A.P. (2016) 'Integrated modelling approach for the evaluation of low emission zones', *Journal of Environmental Management* 177, 253-63.
- Duarte, F. and Ferreira, A. (2016) 'Energy harvesting on road pavements: state of the art', *Energy* 1-12.
- Duarte, F., Champalimaud, J. and Ferreira, A. (2016) 'Waynergy Vehicles: an innovative pavement energy harvest system', *Municipal Engineer* 169, 13-8.
- Frade, I. and Ribeiro, A. (2015) 'Bike-sharing stations: A maximal covering location approach', *Transportation Research Part A: Policy and Practice* 82, 216-27.
- Giménez-Gaydou, D., Ribeiro, A., Gutiérrez, J. and Antunes, A. (2016) 'Optimal location of battery electric vehicle charging stations in urban areas: a new approach', *International Journal of Sustainable Transportation* 10, 393-405.
- Jorge, D., Barnhart, C. and Correia, G. (2015) 'Assessing the viability of enabling a round-trip carsharing system to accept one-way trips: Application to Logan Airport in Boston', *Transportation Research Part C: Emerging Technologies* 56, 359-72.
- Jorge, D., Molnar, G. and Correia, G. (2015) 'Trip pricing of one-way station-based carsharing networks with zone and time of day price variations', *Transportation Research Part B: Methodological* 81, 461-82.

## EDITORIAL

Dear Reader,

In the last month of February it was announced the new composition of the Board of Directors of the Portuguese Foundation for Science and Technology (Fundação para a Ciência e a Tecnologia - FCT for short). The FCT depends directly from the Ministry for Science, Technology and Higher Education, which, in turn, includes one single Secretary of State with a similar designation. As frequently pointed out in previous issues of this newsletter, the FCT has been a crucial institution for the development and consolidation of the vast majority of research programmes and projects carried out in Portuguese universities and research centres. Apart from some European research programmes, other sources of finance geared towards fundamental and applied research, coming from the local industry or the service sector, are still rather scarce in Portugal.

The new FCT team is headed by Prof. Paulo Ferrão as President and Prof. Miguel Castanho as Vice-President, and also includes as Board Members Prof. Isabel Ribeiro and Prof. Ana Sanchez. Certainly not by chance, these fairly well known and respected senior researchers with a significant and diversified experience in academic and research management cover a wide spectrum of scientific fields from engineering, medicine, and biological and communication sciences. In this respect, the government's choice seems logical and consistent, and I take this opportunity to sincerely wish all the successes to this new FCT Board, knowing that the work they have ahead is very difficult given the severe financial constraints in which they have to operate.

There is however one aspect in the composition of this new FCT Board and, by extension, in the Ministry for Higher Education and Science that really strikes me. All the four members of the Board, plus the Minister Prof. Manuel Heitor and the Secretary of State, Prof. Maria Fernanda Rollo, come from Lisbon based universities, four from the University of Lisbon and two from the New University of Lisbon. Let's bear in mind that I'm talking about the six most important science and research decision makers in Portugal, all of them coming from two Lisbon Universities, and three from the same school - the Técnico! Is this a simple coincidence? It is hard to believe; so natural it looks to the eyes of most of my colleagues. It simply reflects the rather centralised and close functioning of the country when it comes to public policymaking and implementation.

Science and Research could hardly be an exception among all the other public policy sectors in this rather centralised country. But this time it looks too much to be true! Unless all the science produced in Portugal was originated in the Lisbon universities and, if that were the case, I would be the first one to accept this reality and the rational for the choice of our science leaders. The facts and figures however contradict such position.

Looking at the most recent number of papers from Portuguese universities included in the ISI database - percentage figures for the year of 2015 - the University of Lisbon is the first in the ranking, responsible for 27.5% of the national output. The University of Oporto, the second in the ranking, is not far from that figure, with 26.0% of the total national output (and, just by curiosity, an overall annual budget that doesn't reach 70% of the Lisbon University budget!).

This idea that the Portuguese research system is circumscribed to Lisbon is absolutely false. Within a radius of approximately 100km from the city of Oporto, five public universities with different sizes and profiles can be found, namely, Coimbra, Aveiro, UTAD, Oporto and Minho. All together these universities had been responsible in 2015 for almost 60% of the total national output of ISI papers. How can we accept the total absence of these important institutions in the national governing bodies concerning scientific research? Can we ignore that research is by its very social and economic nature a context dependent activity?

Finally, what strikes me most in all this issue is the silence that seems to prevail in the Portuguese scientific community about this clamorous lack of political sensitivity from a government that, in other respects, has been showing signs of openness, social thoughtfulness and ambition, in particular, to definitely turn the page of the austerity policies that so badly affected this country over the last years.

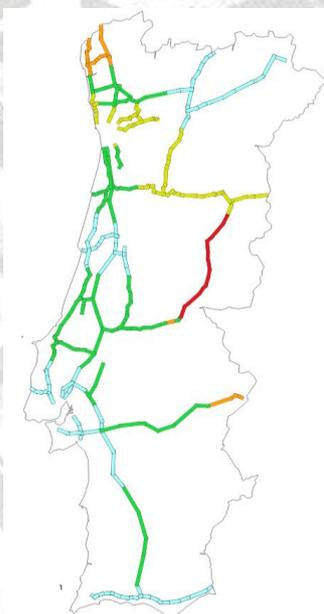
Paulo Pinho

## RECENT PUBLICATIONS

- Martinez, L., Correia, G., Viegas, J. (2015) 'An agent-based simulation model to assess the impacts of introducing a shared-taxi system: an application to Lisbon (Portugal)', *Journal of Advanced Transportation* 49, 475-95.
- Melo, N., Santos, B. and Leandro, J. (2015) 'A prototype tool for dynamic pluvial-flood emergency planning', *Urban Water Journal* 12, 79-88.
- Santos, B., Limbourg, S. and Carreira, J. (2015) 'The impact of transport policies on railroad intermodal freight competitiveness - The case of Belgium', *Transportation Research Part D - Transport and Environment* 34, 230-44.
- Santos, M., Antunes, A. (2015) 'Long-term evolution of airport networks: optimization model and its application to the United States', *Transportation Research Part E: Logistics and Transportation Review* 73, 17-46.
- Santos, R., Paulo, F. and Antunes, A. (2015) 'Planning and scheduling efficient heavy rail track maintenance through a decision rules model', *Research in Transportation Economics* 54, 20-32.

## PROPOSALS/RECENT CONTRACTS

- ATARD - Air Transport and Regional Development (COST TU 1408).  
Start: 25 March 2015.
- Sustainable Urban Mobility - The Role of Autonomous and Connected Vehicles (MIT Portugal Research Seed Fund Grant).  
Start: 1 January 2016.
- TRAPHIC - Traffic Related Air Pollution Impacts on Historic City Centres: An Integrated Approach (PDTC/ECM-URB/3329/2014).  
Start: 1 June 2016.



Study on motorway tolls for Portugal

## RESEARCH GROUP 3

In line with CITTA's Research Plan for the period 2015-2020, the activity carried out by the Transport Analysis and Planning (TAP) group in the last few months has focused on the analysis and planning of transport networks and on the study of transport-environment-health interactions.

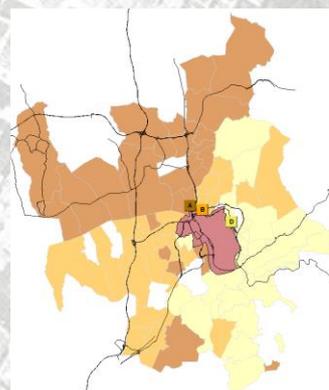
With respect to the latter area of research, probably the most important news relate to the approval of the TRAPHIC project, funded by FCT. It is in the context of this project that CITTA's research on the human (and building) health impacts of traffic-related air pollution will primarily be performed in the next three years. After a long wait dictated by bureaucratic reasons that nothing can justify, it is finally scheduled to start on the 1st June 2016. The project is led by CITTA and involves investigators from other research centres of the Universities of Aveiro, Coimbra and Porto. An interesting feature of this endeavour is that it will be carried out in collaboration with EPF Lausanne and in parallel with a project of the Swiss Programme for Research on Global Issues for Development within which we expect to test the approaches designed within TRAPHIC on the city of La Habana.

Our research in transport network analysis and planning addresses both intercity and urban problems. On the intercity front, a significant part of our present activity focuses on aviation, being performed in the framework of several MIT Portugal (MPP) Transport Systems PhD theses and of COST Action TU1408 - Air Transport and Regional Development. This action was launched in 2015 with a strong contribution from CITTA, and currently involves 30 COST countries. In a recent workshop organized by the Portuguese delegation in Ponta Delgada, Azores, we had the opportunity to present and discuss the first practical results of the Data Envelopment Analysis methodology that is being put forward to examine how efficiently European (NUTS 2) regions are using air transport to promote socioeconomic development. Throughout the PhD theses, we are covering several subjects, from fleet planning to crew scheduling and, more recently, airport capacity management. The latter subject is being dealt with under an arrangement that involves MIT, Carnegie Mellon University, São Paulo International Airport and ANA Aeroportos de Portugal with the aim of improving the slot allocation procedures endorsed by the International Air Transport Association (IATA).

Urban transport network analysis and planning is certainly the area of research that concentrates the largest efforts from our group. Electric and shared mobility planning are domains where CITTA has been particularly active (as attested for instance by recent publications in Transportation Research Parts A, B, C and E), and for which has gained worldwide recognition. Extending this research to autonomous vehicles, a very hot topic in Transport Systems, is an objective that we have pursued successfully in recent times and that we expect to pursue further in the years to come notably in the framework of a project recently approved in the framework of the MPP Research Seed Fund Program (Sustainable Urban Mobility: The Role of Autonomous and Connected Vehicles). Another domain of our interest continues to be urban transit (public transport). The two PhD theses currently underway in the TAP group, respectively addressing efficient transit company management and integrated transit-parking planning, are close to completion and will certainly contribute to reinforce CITTA's reputation in this domain.

To conclude, we want to say that we are happy to see how much has been done recently by the TAP group. But this is the past. What really excites us is the future, and the many challenges that CITTA needs to overcome in order to keep playing a significant role in the fascinating world of research in transport analysis and planning.

António Pais Antunes



Study on the location of three park-and-ride facilities in Coimbra