



RECENT PUBLICATIONS

Bastos Silva A, Seco A and Gregório N (2016) 'Setting speed limits in interurban single carriageway highways using expert's judgment', *Transport* 31, 282-94.

Couto A, Amorim M and Ferreira S (2016) 'Reporting road victims: Assessing and correcting data issues through distinct injury scales', *Journal of Safety Research* 57, 39-45.

Cunto F, Sobreira L and Ferreira S (2016) 'Assessing the transferability of the highway safety manual predictive method for urban roads in Fortaleza city, Brazil', *Journal of Transportation Engineering* 0, 04014072.

Duarte F and Ferreira A (2016) 'Energy harvesting on road pavements: state of the art', *Energy* 169, 79-90.

Duarte F, Champalimaud J and Ferreira A (2016) 'Waynergy Vehicles: an innovative pavement energy harvest system', *Municipal Engineer* 169, 13-8.

Ferreira S, Amorim M and Couto A (2016) 'Risk factors affecting injury severity determined by the MAIS score', *Traffic Injury Prevention* (doi:10.1080/15389588.2016.1246724).

Fernandes P, Pereira S, Bandeira J, Vasconcelos L, Bastos Silva A and Coelho M (2016) 'Driving around turbo-roundabouts vs. conventional roundabouts: are there advantages regarding pollutant emissions?', *International Journal of Sustainable Transportation* 10, 847-60.

Gregório N, Bastos Silva A and Seco A (2016) 'Speed management in rural two-way roads: speed limit definition through expert-based system', *Transportation Research Procedia* 166-75.

Santos J, Flintsch G and Ferreira A (2017) 'Environmental and economic assessment of pavement construction and management practices for enhancing pavement sustainability', *Resources, Conservation & Recycling* 116, 15-31.

Vilarinho C, Tavares J and Rossetti R (2016) 'Design of a Multiagent System for Real-Time Traffic Control', *IEEE Intelligent Systems* 31, 68-80.

EDITORIAL

Dear Reader,

This year our annual conference took place in Coimbra and, due to exceptional circumstances, later than usual, in the last trimester of the year. The theme of the conference was chosen to be the social and economic impact of research carried out in the Urban and Transport Planning fields, with a particular focus on the wide and diversified range of projects currently pursued in CITTA.

Between keynote and invited speakers we had the honour and pleasure to have in the final plenary session the President of the FCT (the Portuguese Foundation for Science and Technology), Prof. Paulo Ferrão who shared with the audience the main policy lines and initiatives of the Foundation for the next years. The conference ended with a roundtable, which gathered the Directors of almost all the Portuguese research centres that have been focusing their research on planning and transports, providing a unique national overview of the potentials, challenges and difficulties this important group of R&D centres, including all together more than six hundred senior and PhD researchers, have been facing in recent years.

The discussion was frank and open. The FCT President announced that, soon, all R&D units would be subject to a nationwide evaluation process based on new procedures, set of criteria and assessment methodology. The idea would be to balance (if not reduce) the importance of scientific publishing through the traditional bibliometric indicators with other indicators associated to the economic and social relevance of research and, in particular, with the capacity of each Centre and research group to engage in research projects involving the industry and, in general, the 'outside world', diversifying and strengthening in this way, the sources of research funding.

The procedural and administrative difficulties associated with channeling research-funding programmes through the Regional Coordination Commissions (CCDR), clearly unprepared to deal with the specificities of scientific research funding and assessment was also debated. A common understanding emerged that fundamental changes in this respect have to be introduced, as soon as possible, strengthening the coordinating and harmonization role of the FCT to counterbalance the rather different assessment approaches that have been adopted, so far, by each CCDR.

Also debated was the FCT's timely and innovative proposal to create the so-called 'scientific employment' to offer better and more stable working conditions to postdoctoral researchers who are not members of the academic staff of our universities. Although recognizing the potential virtues of this proposal, a common concern emerged among the R&D centres present at the conference that a number of administrative and financial obstacles may arise from the universities side. On one hand, there are the likely difficulties of integrating these new positions as assistant professors given the present general budget and administrative constraints to hire new academic staff. The proposal would be to distribute the costs of these new positions between the universities (1/3) the research centres (1/3) and the FCT (1/3). On the other hand, some R&D centres expressed the view that the instable funding situation in which they operate at present is not compatible with the long-term financial commitments the FCT proposal would require. The FCT President announced, in this respect, that soon new information would be released to clarify the nature, role and the contractual conditions under which this new scientific employment will be deployed.

Finally, I would like to express my gratitude to the LOC and the Scientific Committee of the 9th CITTA Conference, in particular to my colleague António Pais Antunes and to Oxana Tchepel and Arminda Almeida for all their work and dedication that made this year's conference a most successful and enjoyable scientific event.

Paulo Pinho

COMMUNICATIONS IN CONGRESSES

Chandan K, Seco A and Bastos Silva A (2016) 'Real-time traffic signal control algorithm for Isolated Intersection, using car-following logic under connected vehicle data collection environment', *World Conference on Transport Research - WCTR 2016* Shanghai, China.

Duarte F, Ferreira A and Champalimaud J (2016) 'Waynergy vehicles: system prototype demonstration in an operational environment', *Transport Research Arena*, Warsaw, Poland.

Duarte F, Ferreira A and Paiva C (2016) 'Energy harvesting on transport infrastructures: the particular case of railways', *International Conference on Road and Rail Infrastructure*, Sibenik, Croatia.

Ferreira S, Couto A and Amorim M (2016) 'Implementation and reliability of MAIS classification: Portuguese experience', *6th European Transport Research Conference Arena*, Warsaw, Poland.

Ferreira S, Couto A and Amorim M (2016) 'Exploring the clinical metrics to assess the health cost impact of traffic injuries', *Road Safety - 17th International Conference*, Rio Janeiro, Brazil.

Oliveira L, Paiva C and Ferreira A (2016) 'Impact assessment in the pavement life cycle due to the overweight in the axle load of commercial vehicles', *4th International Conference on Road and Rail Infrastructure*, Sibenik, Croatia.

Oliveira S, Vasconcelos L and Bastos Silva A (2016) 'Calibration of microscopic simulation models for the analysis of unsignalized intersections', *World Conference on Transport Research - WCTR* Shanghai, China.

Santos J, Ferreira A and Flintsch G (2016) 'Consideration of life cycle greenhouse gas emissions in a multi-objective optimization approach for sustainable pavement maintenance and rehabilitation programming', *5th International Symposium on Life-Cycle Civil Engineering*, Delft, Netherlands.

Santos J, Ferreira A and Flintsch G (2016) 'An adaptive hybrid genetic algorithm for pavement management', *5th International Conference on Theory and Practice in Modern Computing*, Funchal, Portugal.

Santos J, Ferreira A and Flintsch G (2016) 'A multi-objective optimization-based pavement management decision-support system for enhancing pavement sustainability', *4th International Conference on Road and Rail Infrastructure*, Sibenik, Croatia.

PROPOSALS/RECENT CONTRACTS

PAVENERGY - Pavement Energy Harvest Solutions (PTDC/ECM-TRA/3423/2014). Start: 1 June 2016 (3 years).

RESEARCH GROUP 4

CITTA's Transport Engineering and Management group research topics and priorities are centred over three main research subjects: transport infrastructure design and management; road users' behaviour and safety analyses; and optimum design and operation of road elements and networks.

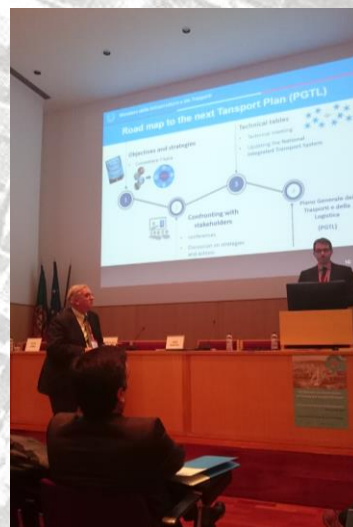
Over 2016, one of the main topics addressed within the first subject has been the evaluation, management and mitigation of risk particularly that related to natural events, and mostly from a geotechnical perspective related to transportation infrastructures, with a main focus on earthquake-induced liquefaction. Another relevant area of work has been the development and implementation of a Multi-objective Decision-Aid Tool for pavement management considering quality, maintenance and rehabilitation costs, user costs, and the residual value of pavements, as well as the development of a Life-Cycle Assessment (LCA) system, also for pavement management, considering quality, comfort, and environment. Finally, within this main research subject continuous work has been done over the years on the development and implementation of an energy harvesting system for implementation on road pavements that converts vehicles' kinetic energy into electricity. This line of work is being continued within a new PTDC research project, PAVENERGY - Pavement Energy Harvest Solutions, which has started on June of 2016, and is due to last three years.

The road users' behavior and safety main research subject is being developed through a number of research topics, namely driver behavior modeling, namely addressing the evaluation of the influence of personality traits on driver behavior, and the level of risk assumed and driver's aggressiveness, but also the evaluation of driver behavior (driving and cognitive performance) under alcohol influence. Work is also being done in the development of road environment scenarios for virtual reality, within the context of virtual simulation (oculus rift) versus driving simulator. A PTDC project, named 'Analysis of pedestrian behavior based on simulated urban environments and its incorporation in risk modeling (AnPeb)', with a CITTA team involvement has just started in June 2016.

Road safety research is also at the center of focus, namely through a program involving the implementation of MAIS classification of victims' severity, considering misreporting and underreporting issues and analysis of risk factors on injury severity. Accident frequency and severity prediction modelling is also an area of work, namely that related with accidents involving motorcycles. Speed management research work has been focusing on models to estimate operational speed, and on methodologies for speed limits specification based on characteristics of the road and its surroundings.

Finally, within the third main research subject work is currently focused on roundabouts', particularly turbo-roundabouts, integrated evaluation, and on efficient use of real-time information on traffic signals optimization. Work is also being done on management of metro systems and of urban emergency medical services in dynamic cities.

Álvaro Seco



9th CITTA Conference: The economic and social impacts of planning and transport research