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LECTURES

Prof. Pierluigi Coppola
Università degli Studi di Roma "Tor Vergata"

Planning for sustainable mobility in the era of connected and autonomous vehicles: research perspectives, methods and tools

December 19th, 2018
2:00 pm

Sala Consiglio
Department of Mechanical Engineering
Via La Masa 1, Milano

Abstract

The latest technological innovations are rapidly and radically transforming the transport sector, creating the base for mobility solutions which, accompanied by cultural and socio-economic changes, open to new future scenarios that are still difficult to predict, but are gradually coming to the fore.

Research in the field of transport technological innovation is focused on three main areas: electrification, connectivity, and automation. In fact, future mobility will be characterized by an extensive use of Electric, Connected and Automated Vehicles (E-CAVs) and by roads adequately equipped to accommodate them (Smart Roads). This may offer new solutions to better manage traffic flows and increase infrastructure capacity, and to promote the use of sustainable and seamless multimodal transport solutions. However, some researchers fear the risk of an overall increase in road congestion, higher energy consumption, polluting emissions, visual intrusion and land use expenditure. Therefore, the broad spectrum of potential impacts must be carefully assessed against the changes that these systems will bring to the mobility scenario, also in terms of impacts on land use, social inclusion, and other externalities. To fully exploit the opportunities offered by new technologies, infrastructures, services, and regulation on transport ought to be designed aiming not only at improving efficiency but also at higher sustainable development goals such as air quality, safety and social cohesion.

The seminar will firstly present an overview of the undergoing transport innovations and of the integrated actions to optimize their impacts on the Transport-Land use-Environment system. Some models for integrated transport planning in the era of automation and connected driving will then be presented, with applications to technologically advanced scenarios.

Speaker short CV

Pierluigi Coppola, Ph.D. in Road Infrastructures and Transport Systems, is Associate Professor at the University of Rome “Tor Vergata”, and lecturer at the summer course “Modeling and Simulation of Transportation Networks” of the Massachusetts Institute of Technology.
His research interests include Land-Use and Transports Interactions (LUTI) models, sustainable mobility planning, travel demand behavior and dynamic traffic assignment models. Prof. Coppola has been involved in many research projects funded by the European Commission and two COST Actions on Accessibility and Transport Equity assessment. He has also participated in research projects on Intelligent Transport Systems and public transportation planning in The Netherlands, and in Projects of relevant national interest (PRIN) funded by the Italian Ministry of University and Research.
He is currently in the group of experts for the Strategic Transport Research and Innovation Agenda (STRIA) of the European Commission and expert of high consultancy of the Italian Ministry for Infrastructures and Transports. He is member of the Program Committee of the European Transport Conference (ETC) and of the Board of the Italian Society of Transport Policy (SIPOTRA). He is currently chairman of the Board of Directors of the Association for European Transport (AET).

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