



PhD in INGEGNERIA MECCANICA / MECHANICAL ENGINEERING - 40th cycle

PNRR 629 PA Research Field: SUSTAINABLE TRANSPORT INFRASTRUCTURE

Monthly net income of PhDscholarship (max 36 months)

€ 1500.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field

This research addresses the challenges that public administrations face to address investment in transport infrastructure toward sustainable mobility. The PhD will contribute to renew competences and instruments with the final goal to improve public administration governance and management capacities in relation to the assessment of transport schemes. In the transport sector, several strategies have been adopted to bridge up accessibility gaps, as well as funding programmes to rebalance by means of infrastructure investments social disparities (e.g. core-periphery; rural vs. urban areas) and to assess the economic, environmental and social impacts of investments in transport sector. The above-mentioned policies need to be carefully assessed and duly planned, in order to facilitate an effective transition without inefficiencies and other undesirable indirect counter-effects. This research programme aims at developing an overall framework to assess transport infrastructure and the impacts of investments in transport technologies at the regional scale, contextualizing them in the context of Lombardy Region. Starting from the regional policy and administrative framework, including funding for Rail and Road networks development as well as mass rapid transport and fleets renewal, the research would allow to upgrade the current technical guidelines in order to improve the public administrations capacity to address public spending towards more equitable and effective decision-making.



<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>The research will be conducted in collaboration with the Directorate General on Infrastructure of the Lombardy Region (Italy). To carry out this research the following methods and techniques will be developed:</p> <ul style="list-style-type: none"> - traffic assignment models (micro and macro), in order to forecast traffic flows and congestion on the transport networks; - cost-benefit and multi-criteria analyses, in order to compare methods for assessing impacts of infrastructure investments; - advanced discrete choice models, in order to simulate travellers' behaviour, attitudes and perceptions about innovative technologies and new modes of transport.
<p>Educational objectives</p>	<p>The project will provide candidate with:</p> <ul style="list-style-type: none"> - knowledge of the transportation sector, particularly the impact assessment of new (rail and road) infrastructure; - methodological competences at both the theoretical and applied level; - problem setting and solving capabilities; - capabilities to interact with people o diverse background.
<p>Job opportunities</p>	<p>Employment statistics of PhDs can be found at: https://cm.careerservice.polimi.it/en/employment-statistics/</p>
<p>Composition of the research group</p>	<p>2 Full Professors 1 Associated Professors 2 Assistant Professors 4 PhD Students</p>
<p>Name of the research directors</p>	<p>Prof. Pierluigi Coppola</p>

<p style="text-align: center;">Contacts</p>	
<p>Email: Pierluigi.coppola@polimi.it Ph +39 02 2399 8376 https://www.mecc.polimi.it/ricerca/personale-docente/personale-docente/prof-pierluigi-coppola For questions regarding scholarship/support please contact phd-dmec@polimi.it</p>	

<p style="text-align: center;">Additional support - Financial aid per PhD student per year (gross amount)</p>	
<p>Housing - Foreign Students</p>	<p style="text-align: center;">--</p>
<p>Housing - Out-of-town residents (more than 80Km out of Milano)</p>	<p style="text-align: center;">--</p>



Scholarship Increase for a period abroad	
Amount monthly	750.0 €
By number of months	6

National Operational Program for Research and Innovation	
Company where the candidate will attend the stage (name and brief description)	Regione Lombardia
By number of months at the company	12
Institution or company where the candidate will spend the period abroad (name and brief description)	Università della Cantabria (Santander, ES)
By number of months abroad	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>Financial aid is available for all PhD candidates (purchase of study books and materials, funding for participation in courses, summer schools, workshops and conferences) for a total amount of euro 6.114,50.</p> <p>Teaching assistantship: availability of funding in recognition of supporting teaching activities by the PhD candidate. There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.</p>