



PhD in INGEGNERIA STRUTTURALE, SISMICA, GEOTECNICA / STRUCTURAL SEISMIC AND GEOTECHNICAL ENGINEERING - 37th cycle

**THEMATIC Research Field: ASSESSMENT AND RETROFITTING OF DEEP FOUNDATIONS
OF EXISTING BRIDGES**

Monthly net income of PhDscholarship (max 36 months)

€ 1180.0

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	<p>This research encompasses a wide variety of topics related to the mechanical response of deep foundations of existing bridges, with special emphasis to:</p> <ul style="list-style-type: none"> - definition of interaction domain related to pile groups subject to inclined eccentric loads; - investigation of the role of nonlinear dynamic soil structure interaction on the seismic response of structures; - numerical approaches to study seismic wave propagation from the seismic source to the structure, with special regard to kinematic interaction.
Methods and techniques that will be developed and used to carry out the research	<ul style="list-style-type: none"> - Analytical and numerical methods for nonlinear soil structure interaction analyses; - Macroelement upscaled constitutive models for deep foundations; - Small scale experimental testing of pile groups.
Educational objectives	<p>The Ph.D. student is expected to develop multidisciplinary skills, that will allow him/her to communicate with researchers and professionals from different related fields, such as civil engineers, geologists, seismologists.</p>
Job opportunities	<p>The most direct career opportunities offered by this research field are within large engineering firms and</p>



	consulting companies devoted to the design of large infrastructures (e.g. highways and railroads) and within research institutions (universities, public or private research centres).
Composition of the research group	1 Full Professors 1 Associated Professors 0 Assistant Professors 1 PhD Students
Name of the research directors	Claudio Di Prisco, Luca Flessati

Contacts	
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	566.36 €
By number of months	0

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p><u>Educational activities</u> (purchase of study books and material, funding for participation to courses, summer schools, workshops and conferences): The Ph.D. course supports the educational activities of its Ph.D. students with an additional funding equal to 10% of the scholarship, starting from the second year (max 1534,33 euros per student per year). In some cases, students will be allowed to use part of this funding also in the first year.</p> <p><u>Teaching assistanship</u> (availability of funding in recognition of support to teaching activities by the PhD student): Ph.D. students are encouraged to apply, upon prior authorization, to the calls to support teaching activities at the undergraduate and Master levels at Politecnico, being paid for that. The teaching assistantship will be limited up to about 80 hours, maximum half of them devoted to teaching and classroom activities and the rest to support classworks and exams.</p> <p><u>Computer availability and desk availability</u>: Each Ph.D. student has his/her own computer for individual use. Each Ph.D. student has his/her own desk, cabinet and locker.</p>