POLITECNICO DI MILANO

PhD in INGEGNERIA STRUTTURALE, SISMICA, GEOTECNICA / STRUCTURAL SEISMIC AND GEOTECHNICAL ENGINEERING - 41st cycle

THEMATIC Research Field: CLIMATE IMPACT ON EARTH CONSTRUCTIONS

Monthly net income of PhDscholarship (max 36 months)
1600.0 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	Increasing climatic impact on earth constructions for transportation or water defence is raising huge concern on the reliability of infrastructures in EU. Recent data from monitored sites in different countries are suggesting that increasing temperatures in the ground are contributing to a much larger extent than previously assumed. To assess the impact of temperature on the reliability of earth constructions in the long term, research is needed to better understand and model the coupled THM response of soils and to improve the interpretation of monitoring techniques able to timely inform on the soil state.
Methods and techniques that will be developed and used to carry out the research	The research will be based on investigation and monitoring data set from the field, from different sources. The successful candidate is expected to develop complementary physically based numerical tools, including ML techniques to: (i) advance the interpretation of cpt data for climate impact; (ii) process and analyse available data from different fields and different sources; (iii) improve existing models to better assess the soil response under climate impact, especially as a consequence of increasing temperature; (iv) suggest a methodology to include the impact of climatic stresses on the reliability of earth constructions.

Educational objectives	The successful candidate will improve physical monitoring and numerical skills. The candidate is expected to cooperate with researchers and professionals from National/Regional Agencies and Industries, thus developing skills in team-work attitude. She/he will participate in the PhD educational programme and will be involved as teaching assistant in the BSc and MSc courses of relevance, to improve the educational skills.
Job opportunities	The PhD research will open wide perspectives towards academic as well as design/management professional career, by improving theoretical, experimental and numerical background as well as team-working skills.
Composition of the research group	1 Full Professors 0 Associated Professors 2 Assistant Professors 2 PhD Students
Name of the research directors	Cristina Jommi

Contacts
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents	--

Scholarship Increase for a period abroad	
Amount monthly	800.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
Educational activities (purchase of study books and material, funding for participation to courses, summer schools, workshops and conferences): financial aid per Ph.D. student per year. 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 first year.

Teaching assistantship: availability of funding in recognition of support to teaching activities by the Ph.D. student. There are various forms of financial aid for activities of support to the teaching practice. The Ph.D. is encouraged to take part in these activities, within the limits allowed by the regulations.

Computer availability: each Ph.D. student has his/her own computer for individual use.

Desk availability: each Ph.D. student has his/her own desk, cabinet and locker.