

Job:

Research Grant for Doctor of Philosophy

Job/Fellowship Reference: PTDC/EAM-GTC/29923/2017

Main research field: Civil Engineering

Sub research field: Computational Geomechanics

Stating date: 01.01.2019

Salary: €2,128.34 per month

Job summary:

A call will be open shortly to award one research grant to develop research activities within the I&D Project CEN-DynaGEO – Coupled Experimental and Numerical Approaches Toward Reliable Dynamic Characterization of Geomaterials, PTDC/EAM-GTC/29923/2017, funded by the Portuguese Science and Technology Foundation (FCT). The recipient is expected to conduct research in the field of Computational Geomechanics at the University of Lisbon, with short missions at the University of Minho and BarcelonaTech.

Research Field: Civil Engineering/Computational Geomechanics

Requirements for admission: Doctor of Philosophy (PhD) in Engineering, with experience in Computational Geomechanics and/or Finite Element Method and/or Trefftz/Boundary Element Method, supported by a substantial publication record. Fluent in written and spoken English.

Work plan: The successful candidate is expected to develop and extend hybrid-Trefftz finite element formulations for the simulation of the transient wave propagation through geomaterials. Specific tasks include: 1) Extension of existing 2D hybrid-Trefftz models for multi-phase media, to include elastic boundary condition; 2) Development of 3D hybrid-Trefftz finite elements for poroelastodynamics; 3) Development of a toolbox for the automatic computation of small strain shear moduli of geomaterials; 4) Numerical optimization of the testing setup in bender element experiments. For further details, please check the Project CEN-DynaGEO page, at <https://sites.google.com/view/cen-dynageo>.

Work place: The bulk of the research work will be developed at the Instituto Superior Técnico of the University of Lisbon ([CERIS](#) – Civil Engineering Research and Innovation for Sustainability), under the scientific supervision of Doctor Dragos Ionut Moldovan, Professor João Freitas, and Professor António Gomes Correia. Short missions are also planned at the University of Minho and BarcelonaTech.

Duration of the Grant: The grant will have the duration of 30 months, beginning in January 1st, 2019.

Monthly salary: The gross monthly salary is €2,128.34. The net monthly salary should amount to €1,495.

Selection criteria: The selection methods will be the following:

70% for the scientific curriculum, with strong emphasis on the research relevant to the project (Dynamic Testing of Geomaterials, Computational Geomechanics, Finite Element Method, Trefftz and/or Boundary Element Method).

30% for the interview.

In the event that the candidates do not have the appropriate profile for the proposed functions, the jury reserves the right to close the competition without any recruitment.

Jury: Dragos Ionut Moldovan (University of Lisbon), João Teixeira de Freitas (University of Lisbon), António Gomes Correia (University of Minho)

Application period: The call will be formally open on September, 15th and close on November, 15th. However, feel free to send your application at any point before November, 15th.

Required documents: applications must contain the following documents, preferably in pdf format:

- copy of PhD certificate or diploma;
- the PhD thesis of the candidate;
- detailed Curriculum Vitae, indicating the scientific contributions of the candidate that are deemed relevant to the work plan;
- copies of the scientific contributions mentioned at the previous item;
- a short (3 page max) research statement in the field of Computational Geomechanics and/or Trefftz/boundary methods.

Applications should be sent by email to dragos.moldovan@tecnico.ulisboa.pt or by regular mail to:

Dr. Dragos Ionut Moldovan

Departamento de Engenharia Civil

Instituto Superior Técnico, Universidade de Lisboa

Avenida Rovisco Pais, 1049-001 Lisboa

Portugal.

Notification of results: the final results will be sent by email to the candidates.