

Call for awarding one Research Fellowship

Ref. BI-MESTRE-MATH2DISLOC

One Research Fellowship, for Master degree holders, is available with **Faculdade de Ciências da Universidade de Lisboa**, in the project “*Mathematical theory of dislocations: geometry, analysis, and modelling (MATH2DISLOC)*”, IF/00734/2013, financed by national funds by Fundação para a Ciência e a Tecnologia, I.P. (FCT) / MCTES, under the FCT Investigator Grant, with the following conditions:

1. Scientific Area:

Applied mathematics, Informatics, Computational mechanics (Numerical simulations in fracture mechanics + Coding).

2. Requirements for admission:

2.1. Mandatory:

- Master in Mathematics, Mechanics, Physics, Informatics, or related areas;
- Knowledge of MATLAB;
- Knowledge of Numerical Methods;
- Experience in Coding.

2.2. Preferential:

- Knowledge of mechanics (elasticity, fracture);
- Knowledge of Finite elements methods;
- Knowledge of topological derivative concept;
- Knowledge in variational methods.

3. Work Plan:

The fellow will first perform numerical simulations with a code written by researchers of LNCC laboratory (Petrópolis, Brazil). Then he/she will write some new code modules and insert them in the existing code. Finally, he/she will perform some numerical simulations on a new model of fracture propagation as developed by Caroccia and Van Goethem. She/he will base her/his work on three papers written by Van Goethem and coauthors.

4. Legislation framework:

Law No. 40/2004, of August 18th, as amended and republished by Decree-Law No. 202/2012 of August 27th, by Decree-Law No. 233/2012 of October 29th, by Law No. 12/2013, of January 29th, and by Decree-Law No. 89/2013 of July 9th

and Lisbon University Fellowships Regulation, published by Order (extract) No. 6977/2015 of June 23th (<https://dre.pt/application/file/67564222>).

5. Place of work:

The work will be developed at the Department of Mathematics of Faculdade de Ciências da Universidade de Lisboa.

6. Scientific supervision:

Nicolas Van Goethem, PhD, and Marco Carocchia, PhD.

7. Fellowship duration:

This fellowship is opened for the 3 (three) months, under a exclusivity basis, eventually renewable for equal periods until a maximum of 9 (nine) months, including the initial duration of the contract.

8. Monthly allowance and Social Insurance:

8.1. The fellowship amount corresponds to € 980 (nive hundred and eighty euros), according to Lisbon University Fellowships Regulation (<https://dre.pt/application/file/67564222>). It will be paid monthly by bank transfer;

8.2. The candidate to be hired may exercise his right to social insurance by joining the voluntary social insurance scheme, under the terms of the Statute of the Research Fellowship. The financing entities assume the costs resulting from the contributions provided for this Social Insurance, according to the Statute of the Research Fellowship.

9. Selection criteria:

Candidates will be assessed based on a curricular evaluation and a selection interview.

The interview will be made to the 3 (three) candidates with highest scores on the curricular evaluation.

The final classification will be calculated according the following weightings: 75% for the curricular evaluation and 25% for the selection interview.

10. Selection committee:

Nicolas Van Goethem, PhD (Presidente), Marco Carocchia, PhD (1st effective member), Riccardo Scala, PhD (2nd effective member). The alternate members are Paulo Guidoni (1st alternate member) and Davide Masoero (2nd alternate member).

11. Deadlines:

The call for applications is open from May 18th to June 1st of 2018.

12. Publication/notification of results:

The final results of the evaluation will become public, through a final grade ordered list which will be posted at the entrance hall of Faculdade de Ciências da Universidade de Lisboa, C4 building, Campo Grande, 1749-016 Lisboa. All applicants will be notified of the results of the evaluation to the email address used for sending the respective application, or by post to the applicant's address.

13. Application:

Application may be sent via e-mail to candidaturas@ciencias.ulisboa.pt, with the subject **"BI-MESTRE-MATH2DISLOC"**, or personally, during office hours (9.30 a.m. to 4.00 p.m.), at the office address of Núcleo de Expediente da Faculdade de Ciências da Universidade de Lisboa, Edifício C5, piso 1, Campo Grande, 1749-016 Lisboa, until the deadline, by attaching the following documents:

- **In the case of being Portuguese citizen**, copy of identification document (ID or citizen card);
- **In the case of not being Portuguese citizen**, copy of identification document (ID card or passport) as well as residence authorization, permanent residence authorization or long-term resident status, if applicable;
- If you agree to be notified for your email address, please send obligatorily the declaration annexed to this Notice;
- Certificates of qualifications of all obtained academic degrees, with final ranking;
- Curriculum Vitae, detailed and updated, stating obligatorily the full candidate's address;
- Document of employment status, indicating the nature of the bond and functions; this document can be replaced by a declaration under honor commitment if there isn't any professional activity or the provision of services;
- Cover letter;
- Optionally, letters of recommendation.

DECLARATION

_____ *(name of the candidate), declare that if the selection jury chooses to communicate and or notify applicants by e-mail, I agree that such communications and or notifications are made to the email address used for submission of my application.*

(Date)

(Signature)