



Institute of Earth Sciences

Research Grant for a Master Student, 1 position

December 10, 2021

A call for tenders is open for one Research Grant for a Master Student within the scope of the project “FIREPOCTEP: Fortalecimiento de los sistemas transfronterizos de prevención y extinción de incendios forestales y mejora de los recursos para la generación de empleo rural posCovid-19”, 0756_FIREPOCTEP_6_E, financed by the program: “EP - INTERREG V A España Portugal (POCTEP)”, under the following conditions:

Scientific area: Earth Sciences, Geography, Geographic Engineering, Forest Engineering, Informatics

Admission requirements:

The applicant needs to be registered in a Master course in one of the above mentioned scientific areas. For this position, three research profiles have been defined, namely:

Profile I – Remote Sensing and Geographic Information Science (GIS)

Profile II – Forest Inventory

Profile III – Geoinformatics

Applicants should have the following qualifications:

Profile I:

- i) good knowledge in Remote Sensing techniques and Geographic Information Systems;
- ii) a minimum score of 15 (on a scale between 0 and 20) in the Remote Sensing and GIS classes;
- iii) driver License;
- iv) availability to conduct field work in the southern part of Portugal;
- v) Preference will be given to applicants with some job experience in Geographic Information Systems and Remote Sensing methods;
- vi) basic knowledge in R programming.

Profile II:

- i) good knowledge in forest inventory;
- ii) a minimum score of 15 (on a scale between 0 and 20) in Forest Inventory disciplines;
- iii) drive License;
- iv) availability to conduct field work in the southern part of Portugal;
- v) Preference will be given to applicants with some field work experience for vegetation structure measurements;

Profile III:

- i) good knowledge in R and/or python programming languages;
- ii) knowledge in cluster computing;
- iii) knowledge in statistical modelling using machine learning and/or deep learning methods for Big Data Analysis;
- iv) Preference will be given to applicants with some experience in spatial data modeling.

As set forth FCT Research Scholarship Regulation No. 950/2019 of December 16, 2019, article 3 and 6, candidates for “BI” must comply as a rule condition for the award of the scholarship, the effective inclusion in study cycles leading to the attribution of academic degrees or in courses not leading to an academic degree. Courses that do not confer an academic degree correspond to the courses provided for in subparagraph e) of paragraph 3 of article 4 of Decree-Law No. 74/2006 of 24 March and must be developed in a higher education institution in association with at least one R&D unit, including a course plan in one or several research areas of the unit.

Work plan: The main goal is to test the capabilities of the GEDI sensor (LiDAR technology) aboard of the International Space Station for aboveground biomass estimation in shrublands. The applicant will collaborate in the following tasks:

Profile I:

- i) LiDAR data collection using Terrestrial Laser Scanner (TLS);
- ii) Field measurements for shrublands aboveground biomass estimation;
- iii) TLS cloud point processing;
- iv) Download and pre-processing GEDI data;
- v) Calibration and validation of biomass equations using TLS data;
- vi) Comparison of biomass estimations derived from simulated and measured GEDI data.
- vii)

Profile II:

- i) Field measurements for shrublands aboveground biomass estimation;
- ii) Calibration and validation of biomass equations using TLS data;
- iii) Comparison of biomass estimations derived from simulated and measured GEDI data.

Profile III:

- i) TLS cloud point processing;
- ii) apply machine learning and/or deep learning methods for shrublands aboveground biomass estimation using TLS-derive metrics;
- iii) Comparison of biomass estimations derived from simulated and measured GEDI data.

Applicable legislation and regulations: The granting of the Research Scholarship will be carried out upon the signing of a contract between the University of Évora and the scholarship holder as set in the template https://www.fct.pt/apoios/Minuta_Contrato_Bolsa.docx, pursuant to the Research Scholarship Statute (Law No. 40/2004 of August 18 and Decree-Law No. 123/2019 of August 28) and in accordance with the legislation and Regulation of Research Grants of the Foundation for Science and Technology, IP in force, regulation nº950/2019 of December 16, 2019: <https://www.fct.pt/apoios/bolsas/regulamento.phtml.pt> and other applicable rules.

Place of work: The work will be developed at Institute of Earth Sciences of the University of Évora, under the scientific guidance of the Doctor Sérgio Godinho.

Duration of the scholarship: The scholarship will have a duration of 9 months, starting on January of 2022.

Amount of monthly maintenance allowance: The amount of the scholarship corresponds to €835.98, according to the table of scholarships awarded directly by FCT, I.P. in Portugal (<http://fct.pt/apoios/bolsas/valores>), payments being made monthly, by check or bank transfer.

Selection methods: The selection methods to be used will be the following: curriculum evaluation and interview, with the respective valuation of 60% and 40%.

Composition of the Selection Jury:

President: Doutor Sérgio Rui Borreicho Coelho Godinho
1st *Member* – Mestre Nuno Ricardo Gracinhas Nunes Guiomar
2nd *Member*– Doutor Rui Jorge Braga de Oliveira
1st Substitute – Prof. Doutora Maria João Costa
2nd *Substitute* – Prof. Doutor Rui Salgado

Advertising/notification of results: The final results of the evaluation will be publicized, through an ordered list *by final grade obtained* posted in a visible and public place (*Institute of Earth Sciences*), being the candidate approved notified through *email*.

To ensure the right of prior hearing of interested parties, the Final Classification project will be announced by any written means to all interested parties.

After communicating the provisional list of the results of the evaluation, candidates have a period of 10 working days to express their opinion in a preliminary hearing of interested parties.

Application deadline and submission of applications: The tender is open from 13/12/2021 to 07/01/2022 and the results of the selection will be published by 13/01/2022.

Applications must be formalized, obligatorily, by sending an application letter with the following documents: Motivation letter, Curriculum Vitae, certificate of qualifications.

NOTE: the applicants must explicitly mention in the application letter **the profile** they are applying for.

For the purposes of application, the evidence may be replaced by a declaration of honor signed by the candidate, but the failure to demonstrate that evidence, in the contracting phase, possession of the required degree on the deadline for application or the non-presentation of proof of enrollment in the study cycle or non-degree course, for scholarships with this component, imply the cancellation of the candidate's application.

Academic degrees obtained in foreign countries require registration by a Portuguese Institution in accordance with Decree-Law no. 66/2018, of August 16 and Ordinance No. 33/2019, of January 25th.

The presentation of the certificate is mandatory for the signing of the contract. More information can be obtained at: <https://www.dges.gov.pt/pt/pagina/recognition?plid=374>

Applications must be sent by email to:

Doutor Sérgio Godinho

email: sgodinho@uevora.pt

