The large-scale potential of regenerating Cerrado and Atlantic Forests 23PDR256
University de São Paulo

Job Title	The large-scale potential of regenerating Cerrado and Atlantic Forests 23PDR256
Department	OBSERVAÇÃO DA TERRA E GEOINFORMÁTICA
	https://sites.usp.br/rcgi/
Institution	University de São Paulo
	Sao Paulo, Sao Paulo, Brazil
Date Posted	Apr. 5, 2024
Application Deadline	Dec. 29, 2023
Position Start Date	Mar. 1, 2024
Job Categories	Post-Doc
Academic Field(s)	Geotechnical
	Agricultural
Job Website	https://sites.usp.br/rcgi/opportunities/
Apply Online Here	https://docs.google.com/forms/d/e/1FAIpQLSfV4KkheEQeMJKiDnkVkOQiDm5pvKU28bFJR5uN
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Job Description

Understanding changes in aboveground biomass (AGB) stocks in regenerating tropical forests for the purposes of environmental restoration is essential to determine the ecosystem services provided by forests and to support international forest restoration agreements and the UN Decade of Ecological Restoration. This Postdoctoral (PD) grant aims to support research within the Nature Based Solutions component of the project supported by Shell-FAPESP. The selected candidate will collaborate with researchers from the RestoreC project at FAPESP-Shell POLI-USP Research Center for Gas Innovation at the University of São Paulo. Summary of the program and projects can be found on the RCGI website (http://www.rcgi.poli.USP.br/).

This PD grant will aim to quantify the large-scale potential of annual carbon removals by forest restoration in the Cerrado and Atlantic Forest biomes as a basis for prioritizing different locally assessed restoration strategies. The PD fellow will be crucial to analyze information derived from special high and moderate resolution remote sensing (including LIDAR) combined with geoprocessing methods and field-based inventory data to obtain large-scale information about regenerating areas in both biomes, their age under different environmental and climatic conditions to produce C accumulation curves and map the potential of these phytophysiognomies to sequester and accumulate carbon.

This analysis requires a PD Fellow with a strong quantitative background in remote sensing, optical data processing, including LIDAR, and mastery of R analysis. The Fellow will have access to a valuable database relating to landscape structure and actual AGB (calculated destructively) with the canopy structure accurately provided by Lidar remote sensing and 3D photogrammetry, generated by the other project work packages.

The applicant will contribute in line with the main objectives of the project:
(O1) Quantify the areas under regeneration in the Cerrado and Atlantic Forest biomes;
(O2) estimate the age and deforestation cycles of these regenerations;
(O3) define homogeneous landscape units according to soil, climatic and biological conditions (WP4 + WP2);
(O4) integrate data on the area and age of regeneration with information about landscape units to establish specific growth curves for natural regeneration, derived from field (WP1+WP2-field) and local (WP3) and regional (WP3+WP4) remote sensing approaches, as a basis for planning interventions;
(O5) generate, from the integration proposed in objective 4, spatially explicit information about the C accumulation potential of native forests.

This Post Doc fellowship is suitable for a highly motivated researcher with an excellent quantitative

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background, with a preferred background in physical geography, forestry or environmental engineering. Other areas of natural or exact sciences may be accepted depending on the candidate's experience. Requires programming skills in R, MatLab, or Python. Requires graduate-level training in remote sensing or geographic information systems, with mastery of ENVI, ARGIS or QGIS software. It requires knowledge of the theoretical framework and techniques for monitoring intact and secondary tropical forests by remote sensing, specifically using multi-sensor data, including LIDAR. International experience, proficiency in English and Portuguese. Ability to collaborate and develop your work in large teams is required.

The candidate must have obtained a doctorate degree less than seven years ago, priority for candidates who have just completed the Doctorate, within the regular duration, with an excellent academic record in postgraduate studies.

Funding Notes: This Postdoc fellowship is funded by FAPESP. The scholarship grant will cover a standard maintenance stipend of BRL 9.047,40 (monthly) plus a research contingency fund equivalent to 10% of the scholarship value (to purchase items directly related to research activity).

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

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