



UNIVERSIDAD
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HUMBOLDT-UNIVERSITÄT ZU BERLIN



The Earth and Life Institute of the Université catholique de Louvain, the Department of Earth and Environmental Sciences of the Katholieke Universiteit Leuven, the Geography Department at Humboldt-Universität zu Berlin and the Instituto de Ecología Regional of National University of Tucuman

seek highly qualified and motivated candidates for

3 PhD Positions in Remote Sensing of Sub-Tropical Forest Degradation and its environmental impacts

Fully funded 4-year PhD position

Starting date: from 1st January 2016 (or later date by agreement)

The successful applicants will study **forest degradation and its environmental impacts in the South American Chaco** using satellite remote sensing and ground data. The Chaco ecoregion, stretching into parts of Argentina, Bolivia, and Paraguay, has experienced widespread land-use change with drastic outcomes for biodiversity and ecosystem service provisioning.

The three positions are **embedded in an international research project** focusing on "Continuous satellite-based indicators for mapping subtropical forest degradation and its environmental impacts (ReForcha)", funded by the **Belgian Science Policy** through its research programme for earth observation STEREO III.

PhD position 1 (supervised by Prof. Eric Lambin (UCL) and Prof. Tobias Kümmerle (HU Berlin))

The PhD candidate will focus on **assessing gradual forest changes in the Chaco, for example due to changing grazing pressure or logging, and how forest degradation trends vary among actor groups**. To quantify forest degradation and recovery across large areas in the Chaco, and to assess the environmental outcomes of these changes, the applicant will develop and apply time-series methods that make full use of the Landsat archives and upcoming sensors such as Sentinel-2. Moreover, the candidate will use advanced statistical analyses such as quasi-experimental methods to isolate the effect of different actor groups on forest degradation.

Applications for PhD position1 should be sent electronically in a single PDF file to Mrs. Tatjana Ferl (tatjana.ferl@hu-berlin.de) with Mrs. Dagmar Wörister (dagmar.woerister@geo.hu-berlin.de) in CC. More information can be found here: <https://www.geographie.hu-berlin.de/en/professorships/biogeography/News/ReForCha>

PhD position 2 (supervised by Prof. G. De Lannoy (KULeuven) and Prof. Veerle Vanacker (UCL))

The PhD thesis aims at updating the static climatological vegetation parameters in state-of-the-art land surface models grouped within a Land Information System (LIS) using satellite-based dynamic vegetation information. The candidate will explore the use **ensemble land surface model simulations to evaluate the effect of dynamic vegetation information derived from moderate-resolution sensors** (such as MODIS) **on soil moisture estimates** over the Dry Chaco ecosystem. Furthermore, the analysis of simulated and independent satellite-observed

soil moisture (e.g. from Sentinel, ASCAT, AMSR-E, SMOS, SMAP) will be aligned with trend analyses of spectral vegetation indices to identify long-term phenological changes.

Applications for PhD position 2 should be submitted via the KULeuven online application tool : <https://icts.kuleuven.be/apps/jobsite/vacatures/53920617?lang=en>

PhD position 3 (supervised by Prof. Veerle Vanacker (UCL) and Prof. A. Van Rompaey (KULeuven))

Soil degradation and salinization represent a potential threat to agricultural development in the Dry Chaco ecosystem. The PhD candidate will focus **on monitoring soil degradation following forest dynamics using spatial and temporal approaches**. This involves collecting good quality monitoring data on soil degradation, including soil and water chemistry measurements in the field in close collaboration with the research team of National University of Tucuman (Argentina). In addition, the candidate will develop and apply robust trend analysis of time series phenology derived from spectral vegetation indices from SPOT VGT or MODIS, to identify pathways of environmental degradation.

Please send applications for PhD position 3 in a single PDF file to Mrs. Monique Descamps (Monique.descamps@uclouvain.be) mentioning "Reference : ReForcha".

We seek three candidates with an above-average MSc (or equivalent degree) in Geography, Environmental Sciences, Engineering, Soil Sciences, Forestry, Ecology, or related fields. We expect experience and a strong interest in land system science, forest ecology, and sustainability science. Required methodological skills include a sound background in remote sensing, geographic information systems, and spatial statistics. Experience in scripting languages (e.g., Python) and in R, as well as in forestry biometry methods is a plus. Experience with some modeling is a requirement for position 2. Spanish language skills are highly welcome. We also expect excellent command of the English language, good communication skills, and willingness to work in international research teams.

We offer a position in an international, young and dynamic team with an excellent scientific record. Funding for participation in scientific conferences and relevant workshops is available. The universities of Leuven, KULeuven, and Louvain, UCLouvain, are among the oldest universities in Western Europe, and the largest universities in Belgium. Situated at the heart of Europe, they offer a vibrant and international setting, supported by fast connections to several European cities (twenty minutes by train to Brussels, two hours to Cologne, three hours to Amsterdam, and an hour and a half to Paris). Humboldt-Universität zu Berlin is located in the Berlin-Brandenburg research area and closely linked to neighboring institutions like the Potsdam Institute for Climate Impact Research (PIK) or the German Research Centre for Geosciences (GFZ). Berlin is Germany's largest city with an inspiring metropolitan flair and great scientific networking opportunities. Researchers from abroad are welcome to apply. Please refer to <https://www.personalabteilung.hu-berlin.de/stellenausschreibungen> where you find the legally binding German version of the job announcement.

Applicants should include (1) a letter of motivation, (2) a full CV, (3) excellent grades, (4) a writing example (e.g., a publication, a part of a thesis), and (5) contact details for two references.

Application deadline: 30. November 2016