ROYAL MUSEUM FOR CENTRAL AFRICA

Africa TERVUREN

THE ROYAL MUSEUM FOR CENTRAL AFRICA

is looking for a (m/f)

Researcher in InSAR volcanology and geodynamics

- postdoctoral position -

The Royal Museum for Central Africa is well-known Museum as well as a Government Research Institute with internationally recognized expertise and know-how in human and natural sciences. Around 100 scientists and 150 students and trainees are there exploring the continent and society in all their dimensions.
Research activities performed at RMCA is focusing on 3 complementary areas:
- management and enhancement of Africa's cultural and natural heritage,
- scientific expertise
- services and fundamental research.
The research institute shares its knowledge and skills with local partners and contributes to Africa's sustainable development.

The Earth Sciences Department activities are shared between 4 thematic priorities: Geodynamics, Natural Hazards, Natural Resources, and Environmental Variability. Both research and services are performed by using state-of-the-art techniques in remote sensing, geochemistry and isotopic geochemistry.
The Earth Sciences Dept. hosts the Remote Sensing & Cartography Unit (RS&C) that is strongly involved in the study of Geodynamical processes and geo-hazards in Africa and more specifically in the East African Rift (EAR).
Since 2005, the RS&C contributes to the understanding of the study and monitoring of the Virunga active volcanoes and has developed the GORISK network; a collaborative initiative dedicated to the integrated study of the Nyiragongo and Nyamulagira volcanic areas.

THE CHALLENGE

Given the difficult local conditions in maintaining an operational monitoring network, InSAR plays an important role in the understanding of ground deformations associated to the volcano-tectonic activity. ERS, ENVISAT, ALOS, RADARSAT, have been extensively applied so far.
The candidate is expected to work on InSAR datasets and more specifically on TERRASAR-X data

1. to produce a high resolution DEM over the Virunga and the Kivu Basin area;
2. to perform a geomorphological analysis and produce derived volcano-structural maps;
3. to study long and short terms ground deformations detected by combining X- and C-band SAR data, using classical and time series InSAR techniques combined to ground based measurements;
4. to perform numerical modeling and inversion of the observed deformation;

5. to work in close collaboration and flexibility with the rest of the group working over that area;
6. to participate to field work that will possibly be organized during the contract period.

RS&C is a small but dynamic team that works in close collaboration with other units of the Earth sciences Department, with the National Museum of Natural History and the European Center for Geodynamics and Seismology in Luxemburg, the Goma Volcano Observatory, and the geological Survey of Rwanda.

REQUIREMENTS

The successful candidate will have:

- a relevant academic education in the field of Earth Sciences, preferably Geology,
- a PhD in geology or in a field related to geodynamical processes, preferentially in volcano-tectonic contexts;
- experience in InSAR processing and in numerical methods for modelling and inversion of observed deformations in InSAR datasets;
- a field experience in volcanology or structural geology;
- knowledge in geodesy or geophysical instrumentation is an asset;
- fluent in English, knowledge of either French or Flemish would be appreciated;
- programming experience.

The candidate is expected to develop his research in agreement with the whole group objectives. He must be prepared to work on a challenging topic, and be ready for field work in difficult environments.

WE OFFER

An 18 months full time position in an inspiring environment open on Africa, and a work that concern populations directly at risks of volcano-tectonic hazards. Gross monthly salary will range between 3334€ and 3703€ depending on qualification and experience (including pension and health insurance, excluding allowances).
Expected starting date: February – March 2012

APPLICATION INSTRUCTIONS

Applications must include

- a curriculum vitae including names and contact information of two references with a brief explanation of the applicant's relationship to each reference
- a cover letter including a brief description of the applicant's preparation and relevance to the open position.

They can be sent to:
M. Guido GRYSEELS, Director general
Royal Museum for Central Africa
Leuvensesteenweg 13 - 3080 Tervuren

or by e-mail to hr-rh@africamuseum.be mentioning **s/geo**

This vacancy is open until the position is filled.

More information can be obtained from Dr François Kervyn,
head of Remote Sensing & Cartography unit, Earth science Dept.
E-mail: francois.kervyn@africamuseum.be - Phone: +32 2 769 54 33