Job Offer - Research Engineer at the IPGP, Paris

Context & Activities

As part of the LabEx UnivEarthS, the EROSAT "young team" project aims at evaluating erosion induced sediment flux in various watersheds (mainly in tropical and in alpine areas) by combining remote-sensing observations with *in situ* measurements in terms of hydrology and suspended load. In this context, a one-year position as a **research engineer** in **optical photogrammetry** is open. This position must fulfill the following functions: (i) To finalize image preliminary pre-processing routines (from archive, aerial and satellite images) that are ingested into the MicMac photogrammetric suite (developed by the IGN with the collaboration of IPGP). This first mission consists in homogenizing the existing codes and validating certain steps (e.g. **bootstrap phase**) in order to provide an automatic workflow for large batches processing. In addition, recent developments are to be integrated as well. (ii) Next, analysis will be carried out on the propagation of errors in the output products (3D point clouds, digital terrain models and ortho-mosaics) in relation to reference data (**validation phase**). (iii) Finally, the production of large volumes of databases will be carried out (**production phase**). The analysis of produced time series will be done in collaboration with the scientists of the project. The valorization in the form of documented codes and at least one communication (conference proceedings or scientific papers) are expected. An exploratory work may be carried out if the previous objectives are achieved (e.g., new sensor approach, radiometry and shadow treatment…).

Expertise

– Techniques in photogrammetry for pinhole and push-broom sensors
– Knowledge of MicMac software is a strong plus (*but strong expertise with other is ok*)
– Methods and techniques of software design in the framework of collaborative projects;
– Written and spoken English, level B2 required (*French is not mandatory but will make everyday life much easier*);
– Knowledge of software development, Python or Matlab ecosystem; Basics in XML and C;
– Knowledge of code management, testing and validation, integration and documentation;

Work conditions

The research engineer will work at the Planetary and Space Science team of IPGP, located in Paris's 13th district. Strong collaborations with other IPGP teams are expected (External Envelopes Geochemistry and Tectonics teams) as well as the MicMac development team at IGN. The research engineer will have access to the HPC facilities of IPGP, as well as the aerial and satellite collected data. Teleworking may be applied depending on the Covid situation.

Contract

1-year fixed term contract starting in January 2021 with no possible shift. Extension for an additional year will partly depend on the efficiency/results of the candidate during the first year period but also on the LabEx committee evaluation of the whole project. The gross salary is between 2500 and 2800 Euro monthly, depending on experience and diploma (*i.e. engineer in photogrammetry or Ph.D. in a relative field*).

Contact and application

Interested candidate can send their application files **before Nov. 15 2020** to Antoine Lucas lucas@ipgp.fr with subject:
[IR-MicMac, LabEx] FirstName, LastName

- Cover letter
- Curriculum Vitae
- Publication or communication list (*if applicable)*
- Summary of achievement in regards to the job mission (i.e. relevant *articles for Ph.D., projects for engineer*).
- Two reference letters from relevant people that need to be directly sent to A. Lucas