18-month post-doctoral position

INRA – IGN, Nancy, France

Tree and stand volume assessment from terrestrial lidar data for national forest inventories

In the framework of the Horizon 2020 project DIABOLO funded by the European Union (work package 2, Task 2.2.2, http://diabolo-project.eu), a post-doctoral position is opened in Nancy to join the research group (IGN, INRA and ONF) involved in the project to develop the use of terrestrial lidar (TLS) in forest inventory. The successful applicant will contribute to the development of efficient TLS processing chains to assess tree and stand volumes on general national forest inventory plots.

Job description

The objective of the project is to provide NFIs with an organized collection of plot-level TLS processing tools enabling the computation of wood volume, with the higher level of accuracy and completeness for plots, stems and branches. The challenge will be to combine (i) a cloud density approach for small branches and understorey and (ii) a 3-D tree reconstruction approach for stems and big branches, in order to (iii) assess the total volume of trees and plots. The tools will be implemented in the Computree open-source platform (http://computree.onf.fr/?lang=en).

Emphasise will be given to:

1) Make a survey of available algorithms (in house and from our research partners), their automation degree and their potential for assessing the requested parameters;
2) Implement or adapt these algorithms and design candidate processing chains for the relevant forest parameters;
3) Evaluate the processing chain through the development of statistical models of forest parameters using reference measurements (field or direct measurements on the scans).

The successful applicant will be based at the Laboratory of Forest Inventory of IGN in Nancy (France), and will collaborate with the R&D team of the French National Forest Office (ONF), and with INRA. The candidate will also have collaborations with international partners providing processing algorithms, like University of Sherbrooke (Canada).

Qualifications

The ideal applicant shall have a PhD with a proven experience in T-Lidar remote sensing or point cloud processing for forest applications. Skills in code development (C++) are highly recommended, especially for algorithm understanding and improvement. Preference will be given to those candidates having already developed this kind of algorithms. Background in forest mensuration, forest inventory and related statistical model building will be appreciated.

We encourage application of highly motivated candidates, with an important capacity of carrying out innovative research and efficiency, and a strong interest in leading peer-review publications.

Proven skills in both oral and written scientific English and the ability to work in a French speaking environment are required.

To be appointed as a postdoc, the applicant should have been awarded her/his PhD no more than three years ago at the time of application.

Duration: 18 months

Start: ideally January 1th, 2016

How to apply?

Applicants should submit a CV including a publication list and a short description of previous research, current research interests and other activities of relevance for the position. A copy of the PhD diploma, copies of no more than three publications, and telephone numbers and e-mail addresses of up to three references should be given.

Applications are to be sent to Dr. Cédric Véga: cedric.vega@ign.fr

Applications will be accepted until the position is filled.