

METHODS DEVELOPMENT FOR TERRESTRIAL LIDAR APPLIED TO FOREST INVENTORY WITH A PARTICULAR EMPHASIS ON INTEGRATING A TREE ARCHITECTURAL MODEL

Where: Applied Geomatics Department, Université de Sherbrooke, Sherbrooke (Quebec) Canada

Timeframe: Up to two years starting between August 2016 and December 2016

The research group on the use of terrestrial LiDAR at the Applied Geomatics Department of the Université de Sherbrooke is seeking to hire a post-doctoral candidate. The research will be focussed on the development of methods to estimate tree and stand structural attributes from point cloud data acquired with terrestrial scanners in forested environments. These new methods will take advantage of architectural models to describe detailed branching structure and foliage distribution in trees. The candidate should have a strong background in programming and LiDAR. The ideal candidate will be:

- (1) experience with developing algorithms to deal with point clouds and implement them in C++ on an open source platform for use and distribution (e.g. Computree),
- (2) demonstrated practical experience to process terrestrial LiDAR data, and
- (3) knowledge of architectural models to simulate detailed tree structure.

The post-doctoral candidate will work on methods to improve the current processing of terrestrial LiDAR data to simulate tree structure with the objective to publish these methods in peer-reviewed scientific journals. The post-doctoral candidate will be integrated in a team of 3 PhD and 3 MSc students working on research projects involving the use of terrestrial LiDAR in forestry. The department offers a stimulating scientific environment for learning, with approximately 60 active graduate students and post-doctoral candidates. The research project proposed for this post-doctoral position is part of a large Canadian research initiative called AWARE (aware.forestry.ubc.ca) encompassing 25 research projects devoted to the development of methods for the use of LiDAR in forestry. This project is associated with a wide range of partners including the Canadian Forest Service, the Office National des Forêt in France, several forest companies in Canada and a network of university researchers worldwide, offering excellent opportunities to collaborate with leading researchers both in Canada and around the world.

The Applied Geomatics Department is the largest research centre dedicated to remote sensing in Canada. It is located at the Université de Sherbrooke, a French speaking university with about 15,000 students. Knowledge of French is helpful but not mandatory for this position. Sherbrooke, a city of about 160,000 people, is a dynamic regional pole offering a rich city life and surrounded by a vast choice of outdoor activities for all seasons. The city offers a bilingual experience, as it is home to both French and English universities. Interested parties should send their CV and two letters of reference to:

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