



## SPECIAL SESSION 12

### Terrestrial laser scanning in environmental monitoring

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#### **The goal of the session**

Terrestrial laser scanning (TLS) has been widely utilized in forest mensuration and environmental monitoring during the last decade. The very detailed structural information that TLS can provide has enabled emerging and expansion of applications within the forest domain. TLS has enabled reconstruction of stems and branches enhancing improved biomass estimation in various geographic regions and forest types. Similarly, detailed information allows for testing new theories on tree growth and forest dynamics. As multitemporal TLS data sets are becoming more available characterizing changes in trees and forests can be enhanced. Novel multispectral TLS applications have enabled simultaneous collection of structural and spectral information for applications that allow us to see further than the structure of trees.

In our session, we encourage scientists to present their TLS applications, novel processing algorithms and combinations with other kinds of remote sensing data within and outside the forest sector. We would also like to discuss why in some regions TLS has remained mainly as a research instrument despite the high potential it has shown for detailed tree information and what could be done to enhance the practical use of TLS.

#### **Potential topics:**

- TLS as a calibration and validation tool for satellite-based forest products
- Novel methods in TLS data processing
- Streamlining the process from raw point clouds to data products
- Novel applications of TLS data for forest ecology and management
- Monitoring changes with TLS
- Utilization and calibration of TLS intensity data
- Multispectral TLS applications
- Fusion of TLS data with other remote sensing data