



Proceedings of the SilviLaser Conference 2021

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PREFACE

SilviLaser 2021 was the 17th conference in a series focused on the applications of LiDAR and related technologies for assessing and managing forest ecosystems. The main aim of the conference was to bring together research scientists, data providers, device manufacturers, and practitioners from around the world to share their experience in the development and application of LiDAR to improve our understanding of forest ecosystem functioning and facilitate their sustainable management through improved forest assessment and inventory. An additional aim of the conference was to discuss alternative methods for three-dimensional forest mapping in addition to the different LiDAR systems. Especially in the case of terrestrial and UAV-based methods, many new systems have been established in recent years, some of which are already suitable for practical use.

In order to emphasize the practical application of the different methods, we also organized an extensive field campaign where a wide range of institutions and equipment manufacturers demonstrated their systems live in the forest. Additionally, the company Rieggl supported this field campaign by providing an airborne laserscanning flight over the field sites. Finally, detailed reference data was collected by the company Umweltdata, BOKU and TU Wien. The recorded data will soon be freely accessible and thus available to the community for a wide variety of scientific work. These unique data sets will also form the basis for an international benchmark on the topic of parameter retrieval from different 3D recording methods.

The SilviLaser 2021 was organized by TU Wien in cooperation with the company Umweltdata GmbH and took place in Vienna from 28th to 30th of September 2021. Due to the Covid pandemic, the conference was held as hybrid conference. To take into account the different time zones of remote and onsite participants, all presentations were recorded and were available to all conference participants even after the end of the conference via the conference platform. This platform also allowed us to communicate with all conference participants and sponsors, whether they were present virtually or physically. In this way, we could guarantee the best possible interaction of on-site and virtual participants.

In total, 129 high quality extended abstracts were submitted to the SilviLaser conference and were reviewed by the scientific committee. After few withdrawals due to pandemic reasons (i.e. travel restrictions), 119 contributions, divided in 30 pico and 89 oral presentations, were presented during the conference. Additionally, eight excellent keynote presentations were given by Juha Hyyppä, Mike Wulder, Amy Neuenschwander, Xinlian Liang, Quinghua Guo, Gottfried Mandlbauer, Håkan Olsson, and Martin Pfennigbauer, Peter Rieger and Bernhard Groiss.

These proceedings contain the extended abstracts of all pico and oral presentations. Selected full papers based on these presentations will be published in the special issue “Advances of laser scanning in forest science and silviculture” in the *International Journal of Applied Earth Observation and Geoinformation* very soon.

Finally, we would like to thank all the conference participants for their participation and presentations and all the helpers and the local organising team for their tireless efforts.

Markus Hollaus
December 2021

SCIENTIFIC COMMITTEE

We would like to thank the members of the scientific committee for reviewing all submissions:

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