3rd Call

5th International Conference on Soil-, Bio- and Eco-Engineering in 2021: Bern, Switzerland

21. – 25. June 2021


Institution: Bern University of Applied Sciences, EcorisQ,
Address: Laenggasse 85, 3052 Zollikofen, Bern, Switzerland
https://www.hafl.bfh.ch/ueber-die-hafl/campus/bildergalerie.html

Conference themes include:

- Root-soil interactions and distribution
- Root reinforcement
- Soil erosion and conservation
- Riverbank and coastline protection measures
- Slope stability modelling
- Effects of vegetation on hillslope hydrology
- Bioengineering, ecology, and biodiversity
- Eco-DRR measures, protection forests, and soil Bioengineering
- Risk management and decision support systems
- Benefits and liabilities in slope and erosion control

Local organizing committee and affiliations:

Prof. Jean-Jacques Thormann *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland*
Prof. Dr. Luuk Dorren *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland; EcorisQ*
Dr. Massimiliano Schwarz *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland; EcorisQ*
Dominik May *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland*
Niels Hollard *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland*
Dr. Filippo Giadrossich *Department of Agriculture, University of Sassari, Sassari, Italy*
Dr. Denis Cohen *Department of Earth and Environmental Science, New Mexico Tech, Socorro, NM, USA*
Prof. Dr. Gian Battista Bischetti *Department of Agricultural and Environmental Science, University of Milan, Milan, Italy*
Dr. Alexia Stokes *French National Institute for Agricultural Research INRA, University of Montpellier, Montpellier, France*

Additionally, local partners will be involved (i.e., Cantons, private companies, Swiss Federal Office for the Environment).

Important Deadlines:

- Abstract submission (oral and poster): 31st October 2020
- Early-bird registration closes: 31st January 2021

Contact:

Telephone: +41 79 717 38 46
Email address: dominik.may@bfh.ch, massimiliano.schwarz@bfh.ch

Description:

As in the preceding conference series of SBEE, we will bring scientific researchers, practitioners, geotechnical, civil engineers, biologists, ecologists, geomorphologists and foresters together to discuss current problems in soil resources sustainability, soil erosion and slope stability research and how to address those problems using soil bio- and eco-engineering techniques.

Over the last 50 years, alterations in land-use coupled with the consequences of climate change have led to severe degradation of mountainous and hilly regions around the world compromised several aspects related to their ecosystem services (e.g., protection against natural hazards, water quality, sustainability of soil resources, etc.). Once erosion processes are underway, the replacement of soil on the denuded slope can take thousands of years through natural processes. The world's population is expected to reach 9 billion by 2040 and as such, agricultural soil is precious, and the importance of hillslope stability is becoming more a priority of governments needing to protect and feed the rapidly increasing populations. Therefore, the prevention of hillslope instability, the restoration of degraded slopes and the correct management of steep farmed slopes is of utmost importance. In response to the need for better mitigation strategies, major advances in research and applications for using vegetation to improve slope stability have been established during the last ten years, largely due to the development of techniques and models for the study of root-soil interactions at different scales. These advances will be presented and discussed at the conference, where sessions will focus on root-soil mechanics, vegetation on slopes over time and space, vegetation for reversing soil degradation and soil bioengineering case studies. Proceedings will be published in special editions of the international journals 'Plant and Soil' and 'Ecological Engineering.

Scientific committee:

- **Dr. Alexis Stokes** *French National Institute for Agricultural Research INRA, University of Montpellier, Montpellier, France*
- **Dr. Massimiliano Schwarz** *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland; EcorisQ*
- **Dr. Filippo Giadrossich** *Department of Agriculture, University of Sassari, Sassari, Italy*
- **Dr. Chris Phillips** *Manaaki Whenua Landcare Research, Lincoln, New Zealand*
- **Prof. Dr. Luuk Dorren** *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland; EcorisQ*
- **Prof. Jean-Jacques Thorman** *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland*
- **Dr. Stéphane Burgos** *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland*
- **Prof. Dr. Gian Battista Bischetti** *Department of Agricultural and Environmental Science, University of Milan, Milan, Italy*
- **Dr. Kenneth Loades** *James Hutton Institute, Invergowrie, Dundee, UK*
- **Dr. Hans Peter Rauch** *Institute of Soil Bioengineering and Landscape Construction, University of Natural Resources and Life Sciences BOKU, Vienna, Austria*
- **Dr. Filippo Lechthaler** *Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Bern, Switzerland*

Program

For the scientific session, a keynote lecture will introduce a review of the topic session

Time organization:

Table 1: Timetable of the conference (21th-25th June).

	Mon	Tue	Wed	Thu	Fri
8:30 - 10:00	Keynote S1	Keynote S4	Keynote S7	Excursion	Practice Courses
10:30 - 12:00		Keynote S5	Keynote S8		Practice Courses
13:30 - 15:00	Keynote S2	Keynote S6	Keynote S9		Practice Courses
15:30 - 17:00	Keynote S3		Keynote S10		Practice Courses
17:30 - 19:00	Poster Apero		Vineyard Apero		ecorisQ GA
Evening		Conference Dinner			

Logistics:

- The scientific sessions take place at the Bern Museum of Nature History.
- The conference dinner and the practical courses take place at the Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences.
- Starting point of the excursion is the Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences.

Scientific sessions, Monday - Wednesday:

- S1 Root distribution and reinforcement modeling and measurement (Key: **Giadrossich F.**, Chair: **Stokes A.**)
- S2 Surface erosion and vegetation (Key: **Poesen J.**, Chair: **Burgos S.**)
- S3 Shallow landslides and vegetation on hillslope scale (Key: **Mao Z.**, Chair: **Giadrossich F.**)
- S4 Shallow landslides and vegetation on catchment scale (Key: **Hales T.**, Chair: **Phillips C.**)
- S5 Hydropedology and vegetation (Chair: **Rauch H. P.)**
- S6 Riverbank stability and vegetation (Key: **Perona P.**, Chair: **May D.**)
- S7 Protection forest management (Key: **Vacchiano G.**, Chair: **Berger F.)**

- S7 Soil Bioengineering and temporal technical construction in slope stability (Key: **Cesare G.**, Chair: **Bischetti G.B.**)
- S8 Soil Bioengineering and temporal technical construction in riverbank stability (Key: **Raymond P.**, Chair: **Rauch H.-P.**)
- S9 Bio-economics and the role of vegetation in disaster risk reduction (Key: **Castro M.** and **Moos C.**, Chair: **Lechthaler F.**)

Excursion, Thursday:

- Bioengineering and Torrent control measures: Gantrisch-Simmental, Canton of Bern (**Schwarz, M.** & **May, D.**)

Post-conference courses, Friday:

- SOSlope (**Cohen, D.** & **Schwarz, M.**), slope stability and vegetation
- Rockyfor (**Dorren, L.**), rockfall and vegetation

Conference fees

Table 2: Conference fees.

	Early-bird registration	Late registration
Conference fee	CHF 500	CHF 650
Conference dinner	CHF 60	CHF 60
Excursion	CHF 150	CHF 150
Practice courses	CHF 250	CHF 350

General information

Access to the conference center is possible via airport, train and car.

Bern has a continental airport (Bern Belp) and the nearest international airports (less than 1.5 h train from Bern) are Zurich, Basel, Geneva and Milano.

The conference will take place at Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences and at the Bern Museum of Nature History. Both locations are easily accessible with train or bus.

Recreational and touristic amenities in the area include cities of Bern, Thun, Spiez, Fribourg, the north Alps and Prealps, such as Simmental, Emmental, Grindelwald, Gantrisch natural reserve and Swiss Jura region.