5th International Conference on Soil, Bio- and Eco-Engineering

13-19 June 2020, BFH-HAFL Zollikofen (Bern, Switzerland)

2nd call for abstract submission (oral and poster)

Bern University of Applied Sciences
School of Agricultural, Forest and Food Sciences HAFL
Division Forest Science

5th International Conference on Soil, Bio- and Eco-Engineering

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

We organice this event with the colaboration of the **Verein Für Ingenieurbiologie** and the **European Federation of Soil and Water Bioengineering EFIB**

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, compromising 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'.

Conference topics 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

Important deadlines

- Abstract submission (oral and poster): **30 November 2019**
- Early-bird registration closes: **31 January 2020**

Contact

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Institution

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Local organizing committee and affiliations

- **Jean-Jacques Thormann**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland
- **Dr Luuk Dorren**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland; EcorisQ
- **Dr Massimiliano Schwarz**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland; EcorisQ
- **Eric Gasser**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland
- **Dr Armin Rist**, Department of Architecture, Wood and Civil Engineering AHB, Bern University of Applied Sciences, Burgdorf, 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 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
- **Giovanni de Cesare**,President Verein Für Ingenieurbiologie, member EFIB and EPFL Lausanne

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

Scientific committee

- **Dr Alexia Stokes**, French National Institute for Agricultural Research INRA, University of Montpellier, Montpellier, France
- **Prof Thomas Hubble**, School of Geosciences, The University of Sydney, Sydney, Australia
- **Dr Massimiliano Schwarz**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland; EcorisQ
- **Dr Filippo Giadrossich**, Department of Agriculture, University of Sassari, Sassari, Italy
- **Dr Chris Phillips**, Manaaki Whenua Landcare Research, Lincoln, New Zealand
- **Dr Luuk Dorren**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland; EcorisQ
- **Jean-Jacques Thormann**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland
- **Dr Stéphane Burgos**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland
- **Prof Gian Battista Bischetti**, Department of Agricultural and Environmental Science, University of Milan, Milan, Italy
- **Dr Kenneth Loades**, James Hutton Institute, Invergowrie, Dundee, UK
- **Prof Roy Sidle**, Mountain Societies Research Institute, University of Central Asia, Khorog, Tajikistan
- **Dr Hans Peter Rauch**, Institute of Soil Bioengineering and Landscape Construction, University of Natural Resources and Life Sciences BOKU, Vienna, Austria
- **Dr Filippo Lechthaler**, School of Agricultural, Forest and Food Sciences HAFL, Bern University of Applied Sciences, Zollikofen, Switzerland
- **EFIB** members

Programme

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

Time organization:

- Morning session (8:30 - 12:00): 1 session, initial keynotes (30 min. keynotes) and 4 x 15 min. presentations.
- Afternoon session (13:30 - 17:00): 1 session, initial keynotes (30 min. keynotes) and 4 x 15 min. presentations.
- Poster-aperitif (17:00 - 19:00)

Conference schedule (13th-19th June)

	Sat	Sun	Mon	Tue	Wed	Thu	Fri
8:30-10:00	Tools courses	Tools courses	Keynote S1	Keynote S5	Keynote S9	Excursions	Practical courses
10:30-12:00	Tools courses	Tools courses	Keynote S2	Keynote S6	Keynote S10	Excursions	Practical courses
13:30-15:00			Keynote S3	Keynote S7	Keynote S11	Excursions	Practical courses
15:30-17:00		Welcome gala	Keynote S4	Keynote S8	Keynote S12	Excursions	Practical courses
17:00-19:00		Welcome gala	Posters	Posters	Posters	Excursions	EcorisQ GA
		Welcome gala			Conference dinner	Excursions	

Logistics:

- Morning and afternoon sessions will take place in the main auditorium
- Poster sessions will take place in the corridors between the main auditorium, main entrance and the cafeteria

Pre-conference courses

Tool courses - Academic workshops (for PhD students, post-docs, research associates, etc.) on Saturday 13th and Sunday14th June 2019:

- RBM and field measurements (F. Giadrossich, & M. Schwarz,), root reinforcement modelling and measurements

Scientific sessions, Monday – Wednesday

- S1 Root distribution modelling and measurements (keynote: I.C. Meier ; chair: A. Stokes)
- S2 Root reinforcement modelling and measurements (keynote: F. Giadrossich; chair: K. Loades)
- S3 Surface erosion and vegetation (keynote: J. Poesen; chair: S. Burgos)
- S4 Shallow landslides and vegetation (hillslope scale) (keynote: Z. Mao; chair: D. Cohen)
- S5 Shallow landslides and vegetation (catchment scale) (keynote: T. Hales; chair: C. Phillips)
- S6 Hydropedology and vegetation (keynote: T. Bogaard; chair: M. Schwarz)
- S7 Riverbank stability and vegetation (keynote: P. Perona, & E. Gasser; chair: T. Hubble)

- S8 Protection forest management (keynote: B. Lange; chair: R. Sidle & J.J. Thormann)
- S9 Soil bioengineering and temporal technical construction in slope stability (keynote: NN; chair: G.B. Bischetti)
- S10 Soil bioengineering and temporal technical construction in riverbank stability (keynote: P. Raymond; chair: H.-P. Rauch)
- S11 Bio-economics for SBEE (keynote: L.M. Castro; chair: F. Lechthaler)
- S12 The role of vegetation in DRR in mountain regions (keynote: NN; chair: L. Dorren)

Excursions

Excursions, Thursday:

- Eco-DRR along roads: Gotthard region, cantons of Uri and Ticino / Visp-Simplon, canton of Valais (L. Dorren)
- Protection forest management in the Swiss Alps (disturbances, coppice woods, neophytes): Adelboden, canton of Bern (J.J. Thormann)
- Bioengineering and torrent control measures: Gantrisch-Simmental, canton of Bern / Sarnen, canton of Obwalden (M. Schwarz & E. Gasser,)

Post-conference courses

Post-conference courses on model applications, Friday:

- SOSlope (D. Cohen & M. Schwarz), slope stability and vegetation
- Rockyfor (L. Dorren), rockfall and vegetation
- BankforMAP and SlideforMAP (E. Gasser & M. Schwarz), streambank stability and vegetation
- Tree stability (L. Sani)

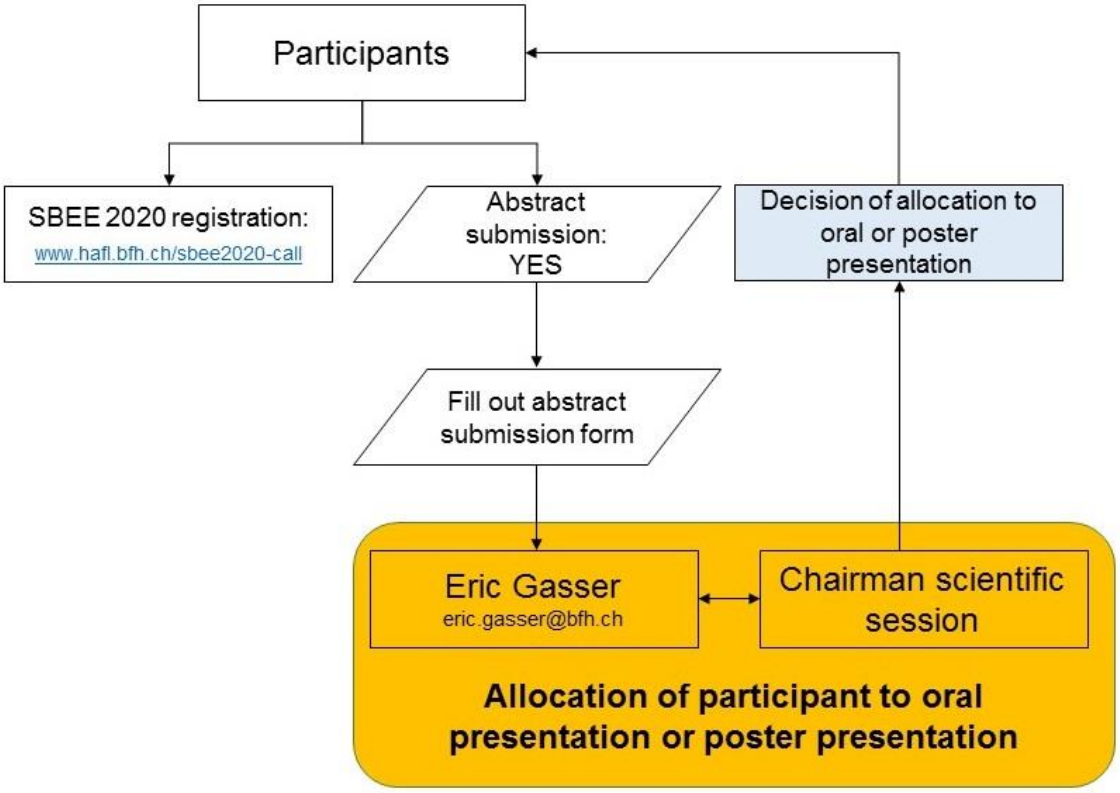
Conference fees

	Early-bird registration	**Late registration**
Conference fee	CHF 500	CHF 650
Conference dinner	CHF 60	CHF 60
Pre-conference courses	CHF 150	CHF 200
Excursions	CHF 150	CHF 150
Post-conference courses	CHF 250	CHF 350

Registration

Participants who wish to attend the conference with and without contributing a presentation should register online. Those participants who wish to contribute can submit their abstracts as a PDF document to eric.gasser@bfh.ch. The submitted abstracts will be forwarded to the chair of the corresponding session and the chair will allocate the participant to an oral or poster presentation. The abstract should contain no more than 3000 characters (with spaces) and include the title of the presentation, name(s) and affiliation(s) of the author(s), the session at which they wish to present their work and a small graphical abstract for visualization purposes. The corresponding author will be notified as soon as the chair has allocated the presentation.

Procedure for conference registration and abstract submission:



General information

Access to the conference centre 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 (2 h) and Milan (3.5 h).

The conference will take place at the School of Agricultural, Forest and Food Sciences, Bern University of Applied Sciences, which located approximately 6 km north of Bern. From the main train station in Bern, the campus is approximately 8 minutes by train plus 10 minutes on foot. The campus is easily accessible by car, parking is limited but not free of charge.

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