

PHD SUMMER SCHOOL MONT-SOLEIL

8TH - 13TH AUGUST 2022

FIELD-BASED INSIGHTS INTO THE IMPLEMENTATION OF RENEWABLE ENERGIES

MONDAY 8.08 CLIMATE AND ENVIRONMENTAL PHYSICS

- 13:00 Check-in at University of Bern, Climate and Environmental Physics (see map on page 5)
- 14:00 **Introduction**
Dr. Martin Pfisterer, Co-chairman / hon president Société Mont-Soleil
Prof. hon. Alfred Rufer, Co-chairman / hon professor EPFL, Lausanne
Christian Ochsenbein, Co-chairman / Bern Univ. Applied Sciences, Biel
- 14:30 **Climate Change and the 1.5°C Goal of the Paris Agreement**
Prof. Thomas Stocker, University of Bern
Prof. Markus Leuenberger, University of Bern
- 16:00 **Visit to the Laboratories of Climate and Environmental Physics**
- 18:00 Transfer to region of Mont-Soleil
- 19:00 Check-in accommodation
- 20:00 **Welcome dinner by the City of Saint-Imier**

TUESDAY 9.08 PHOTOVOLTAICS AND HYDROPOWER

- 08:00 **Opening in the BKW pavilion Mont-Soleil**
Prof hon Alfred Rufer, Co-chairman / EPFL Lausanne
- 08:15 **Mont-Soleil – region, history and chances for the future**
Dr. Martin Pfisterer, Co-chairman / Pres hon Société Mont-Soleil
- 08:45 **Mont-Soleil PV Plant – Layout, Long-term Measurements, Life Cycle Analysis**
Matthias Burri, Bern Univ. Applied Sciences, Burgdorf
- 09:15 **PV Cell Market, developments in the past and in the future**
Prof. Christof Bucher, Bern Univ. Applied Sciences, Burgdorf
- 09:45 **Mont-Soleil PV Plant – technical visit**
Prof. Christof Bucher, Bern Univ. Applied Sciences, Burgdorf
Matthias Burri, Bern Univ. Applied Sciences, Burgdorf
- 10:15 Coffee break
- 10:45 **'Mont-Soleil group work',
presentation of the 'Mont-Soleil tasks' and organization, work session 1**
- 12:00 Lunch
- 13:00 **'Mont-Soleil group work', work session 2**
- 15:00 Coffee break
- 15:30 **Hydropower deployment for energy storage in the field**
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne
Andreas Stettler, managing director Swiss Hydro Association, Baden
- 16:30 **Excursion and visit to a hydropower plant at the Doubs river**
Cédric Zbinden, CEO La Goule SA, Saint-Imier
- 19:00 Dinner on the river Doubs, offered by La Goule SA
- 20h30 Return to the accommodation

WEDNESDAY 10.08 WIND ENERGY & GROUP WORK PRESENTATION

- 08:00 Transfer to Viewpoint Chasseral 1'600 m.a.s.l.
JUVENT Wind Power Plant, Landscape and public acceptance, excursion
Dr. Martin Pfisterer, Co-chairman / founding President of JUVENT SA
- 09:30 Return to Mont-Soleil
- 10:00 **Assessing Wind Resources in Complex Terrain**
Sara Koller, Head Wind & Ice, Meteotest, Bern
- 11:00 **Visit to JUVENT windfarm**
Monique Voumard, plant information manager Mont-Soleil, BKW
- 12:00 Lunch
- 13:15 **PlanetSolar, the First around the World Tour with a Solar Boat**
Christian Ochsenbein, chief engineer and member of the boat crew
- 14:00 **'Mont-Soleil group work', work session 3**
- 16:00 Coffee break
- 16:30 **'Mont-Soleil group work', presentations by the groups**
- 18:00 Return to the accommodation

THURSDAY 11.08 ENERGY STORAGE AND ADVANCED PV TECHNOLOGIES

- 07:45 Transfer to the BFH Energy Storage Research Centre at Switzerland Innovation Park Biel/Bienne
- 08:30 **Energy Storage and Efficiency – The Theory of the Ragone Representation**
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne
- 09:15 Coffee break
- 09:45 **Performance (SoC) and Life Cycle (SoH) Modeling and BMS of Li-Ion Batteries**
Prof. Dr. Andrea Vezzini
- 10:45 **BFH/SIPBB Battery Testing Lab and SIPBB Disassembly Line – Visit and Demonstrations**
Dr. Priscilla Caliendo, Bern University of Applied Sciences
David Guralnick, Switzerland Innovation Park Biel/Bienne
- 12:00 Lunch
- 13:15 Departure for CSEM/EPFL Neuchâtel
- 14:00 **Design of High Efficiency Solar Cells**
Prof. Dr. Christophe Ballif, PV-Lab, EPFL, Neuchâtel
Dr. Bertrand Paviet-Salomon, PV-Lab, EPFL, Neuchâtel
- 15:00 Coffee break
- 15:30 **Visit of the Photovoltaic Laboratories CSEM/EPFL Neuchâtel**
- 17:00 Departure to Saint-Imier
- 18:00 **Energy Autonomous Concept for Cheese Making**
Cédric Spielhofer, CEO Fromageries Spielhofer, Saint-Imier
- 18:30 Cheese fondue dinner
- 20:00 Return to the accommodation

FRIDAY. 12.08 ELECTRICAL GRID INTEGRATION

- 08:00 **Introduction**
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne
- 08:15 **Planning and Control of Active Power Networks**
Prof. Mario Paolone, Distributed Electrical Systems Lab, EPFL, Lausanne
- 09:15 Coffee break
- 09:45 **Classical and Advanced Power Electronic Solutions for the Network Integration**
Prof. Drazen Dujic, Power Electronics Laboratory, EPFL, Lausanne
- 10:45 **Power Quality in Distribution Grids Related to RES and Power Electronics**
Stefan Schori, Power Systems Lab, Biel/Bienne
- 12:00 Lunch
- 13:30 Transfer to Grindelwald
- 15:30 Hotel check-in, Eiger Lodge Grindelwald
- 16:30 **Glacier Retreat, District Heating, expansion and visit of the plant**
Dr. Martin Pfisterer, Co-chairman / founding President Holzwärme Grindelwald AG
- 18:15 **Jungfrau Region and the Glaciers, presentation**
Bruno Hauswirth, Director Resort Grindelwald
Aperitif with Diploma ceremony, followed by Alpine dinner at Hotel Eiger Grindelwald
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne

10:45 *Parallel session for partners and media*
5 ans école doctorale Mont-Soleil, bilan et perspective
Alfred Rufer et Martin Pfisterer (co-chairmen PhD Summer school Mont-Soleil)
CircuBAT, état des travaux et 'second use Mont-Soleil'
Andrea Vezzini (BFH), Mario Paolone (EPFL)

SATURDAY 13.08 HIGH ALTITUDE RESEARCH STATION JUNGFRAUJOCH 3500 M A.S.L.

- 08:00 Departure from Grindelwald (Grund) to Jungfrauoch / Top of Europe
- 09:00 **High Altitude Research Station Climate change, long-term high-altitude CO2 measurements**
Prof. Markus Leuenberger, Director HFSJG, University of Bern
Visit to and guided tour through the High-Altitude Research Labs
- 12:00 **End of Summer School at Jungfrauoch / Top of Europe**

PROCESS OF APPLICATION AND DECISION

Publication of the final program with application form

www.bfh.ch/summerschoolmontsoleil and
www.societe-mont-soleil.ch

until April 30th, 2022 Application

PhD and Master students are requested to send in their application forms to the head of administration: christian.ochsenbein@bfh.ch

Payment / final decision of participation

After registration you will receive a confirmation within a week and an invoice, which must be paid within 20 days.

Students are accepted on a first come, first served basis. Places are limited.

ADMINISTRATION, ADDRESS AND FEES

Address

PhD Summer School Mont-Soleil

c/o Institute for Energy and Mobility Research IEM
Bern University of Applied Sciences
Christian Ochsenbein, head of administration
CH 2560 Nidau, Switzerland

christian.ochsenbein@bfh.ch

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Fees

Academic part PhD and Master students CHF 500.-

PhD students EPFL and Master students BFH CHF 0.-

Others CHF 900.-

Convenience for all participants CHF 700.-

incl. events, transports, meals & water/coffee, visit Grindelwald/Jungfraujoch

Lodging

Accommodations in a rural lodging on Mont-Soleil and in Grindelwald,

the school accommodations offer student rates

approx. CHF 50 pP night
incl. breakfast

Chasseral Outdoor:

<https://www.chasseraloutdoor.ch/>

Eiger Lodge Grindelwald

<https://www.eigerlodge.ch/en/>

Reservation and lodging details to be made after receiving the official confirmation from the summer school organization.

CHECK-IN AT TO SUMMER SCHOOL ON MONDAY 8.08.2022 13:00

Address: Building “Exakte Wissenschaften”, University of Bern, Sidlerstrasse 5, 3012 Bern
Room B005 – follow the signs

Bern can easily be reached by public transport. Both international airports in Zurich and Geneva have their own train stations.

The Swiss Federal Railways provide an easy to use journey planner for the public transport in Switzerland (see www.sbb.ch/en/timetable.html).

In Bern main station there is an elevator to the University of Bern (circled red in the map below)



Having reached the top floor, you can walk to the check-in in the building ExWi (see map below)



OEC2 02.02.2022