

PHD SUMMER SCHOOL MONT-SOLEIL

7TH - 12TH AUGUST 2023

FIELD-BASED INSIGHTS INTO THE IMPLEMENTATION OF RENEWABLE ENERGIES

MONDAY 7.08

CLIMATE AND ENVIRONMENTAL PHYSICS

- 13:00 Check-in at University of Bern, Climate and Environmental Physics
- 14:00 **Introduction**
Prof. Drazen Dujic, Co-chairman / Professor EPFL, Lausanne
Prof. Andrea Vezzini, Co-chairman / Professor Bern University of Applied Sciences, Biel/Bienne
Prof. hon. Alfred Rufer, Program Director / hon professor EPFL, Lausanne
Christian Ochsenbein, Technical Director / Bern University of Applied Sciences, Biel/Bienne
- 14:30 **Climate Change and the 1.5°C Goal of the Paris Agreement**
Dr. Roland Purtschert, University of Bern
Dr. Jobin Joseph, University of Bern
- 16:00 **Visit to the Laboratories of Climate and Environmental Physics**
- 18:00 Transfer to the region of Mont-Soleil
- 19:00 Check-in accommodation
- 20:00 **Welcome dinner by the City of Saint-Imier**
Introduction by Espace Decouverte Energie, Moussia de Watteville, Director

TUESDAY 8.08

PHOTOVOLTAICS AND HYDROPOWER

- 08:00 **Opening in the BKW pavilion Mont-Soleil**
Prof hon Alfred Rufer, Program Director / EPFL Lausanne
- 08:05 **Mont-Soleil – region, history, and chances for the future**
Dr. Martin Pfisterer, Pres hon Société Mont-Soleil
- 08:45 **PV Cells and Modules**
Prof. Christof Bucher, Bern Univ. Applied Sciences, Burgdorf
- 09:15 **Mont-Soleil PV Power Plant: From lighthouse installation to the long-term benchmarking**
Prof. Christof Bucher, Bern Univ. Applied Sciences, Burgdorf
Matthias Burri, Bern Univ. Applied Sciences, Burgdorf
- 09:45 **Mont-Soleil PV Plant – technical visit**
Prof. Christof Bucher & Matthias Burri
- 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
- 16:15 **Hydropower deployment for energy storage in Nant de Drance**
Alexander Schwery, Head of chief office at GE Renewable Energy
- 17:15 **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
- 20:30 Return to the accommodation

WEDNESDAY 9.08 WIND ENERGY & GROUP WORK PRESENTATION

- 07:30 Transfer to Viewpoint Chasseral 1'600 m.a.s.l.
JUVENT Wind Power Plant, Landscape and public acceptance, excursion
Dr. Martin Pfisterer, founding President of JUVENT SA
- 09:30 Return to Mont-Soleil
- 10:45 **Assessing Wind Resources in Complex Terrain**
Sara Koller, Head Wind & Ice, Meteotest, Bern
- 11:30 **Visit to JUVENT windfarm**
Monique Voumard, plant information manager Mont-Soleil, BKW
- 12:15 Lunch
- 13:15 **'Mont-Soleil group work', work session 3**
- 15:00 Coffee break
- 15:30 **'Mont-Soleil group work', presentations by the groups**
- 17:00 **PlanetSolar, the First around the World Tour with a Solar Boat**
Christian Ochsenbein, chief engineer and member of the boat crew
- 18:00 Return to the accommodation

THURSDAY 10.08 ENERGY STORAGE AND ADVANCED PV TECHNOLOGIES

- 07:30 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
- 09:30 **Performance (SoC) and Life Cycle (SoH) Modeling and BMS of Li-Ion Batteries**
Prof. Priscilla Caliandro, Bern University of Applied Sciences
- 10:30 **BFH/SIPBB Battery Testing Lab and SIPBB Disassembly Line – Visit and Demonstrations**
Prof. Priscilla Caliandro, Bern University of Applied Sciences
Dr. Özhan Özen, Switzerland Innovation Park Biel/Bienne
- 12:00 Lunch
- 13:15 Departure for CSEM/EPFL Neuchâtel
- 14:00 **Design of High Efficiency Solar Cells**
Prof. 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, Sonvilier
- 18:30 Cheese fondue dinner
- 20:00 Return to the accommodation

FRIDAY 11.08 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
- 09:30 Coffee break
- 10:00 **Classical and Advanced Power Electronic Solutions for the Network Integration**
Prof. Drazen Dujic, Power Electronics Laboratory, EPFL, Lausanne
- 11:15 **Energy scenarios for Switzerland**
Prof. Gabriela Hug, Power Systems Laboratory, ETH, Zurich
- 12:30 Lunch
- 13:45 **Power Quality in Distribution Grids Related to RES and Power Electronics**
Prof. Stefan Schori & Ron Buntschu, BFH Grids Lab, Biel/Bienne
- 15:30 Transfer to Grindelwald
- 17:30 Hotel check-in, Eiger Lodge Grindelwald
- 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, Program Director / EPFL, Lausanne

13:45 Parallel session for partners and media

6 ans école doctorale Mont-Soleil, bilan et perspective
Alfred Rufer (Program Directeur) et Cédric Zbinden (président de la société Mont-Soleil)

CircuBAT, état des travaux et 'second use Mont-Soleil'
Andrea Vezzini (BFH), Laurent Raeber (Swiss Energy Park), Christian Ochsenbein (SIPBB)

SATURDAY 12.08 HIGH ALTITUDE RESEARCH STATION JUNGFRAUJOCH 3500 M A.S.L.

- 08:00 Departure from Grindelwald (Grund) to Jungfraujoch / Top of Europe
- 09:00 **High Altitude Research Station Climate change, long-term high-altitude CO2 measurements**
Prof. Silvio Decurtins, President HFSJG, University of Bern
- Visit to and guided tour through the High-Altitude Research Labs**
- 12:00 **End of Summer School at Jungfraujoch / 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 May 31st, 2023

Application

PhD and Master students are requested to send in their application forms to the Technical Director: 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,
CH 2503 Biel/Bienne, Switzerland

christian.ochsenbein@bfh.ch
+41 76 234 40 54

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 incl. events, transports, meals & water/coffee, visit Grindelwald/Jungfraujo	CHF 500.-
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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/>

The reservation of the lodging is organized by the summer school administration

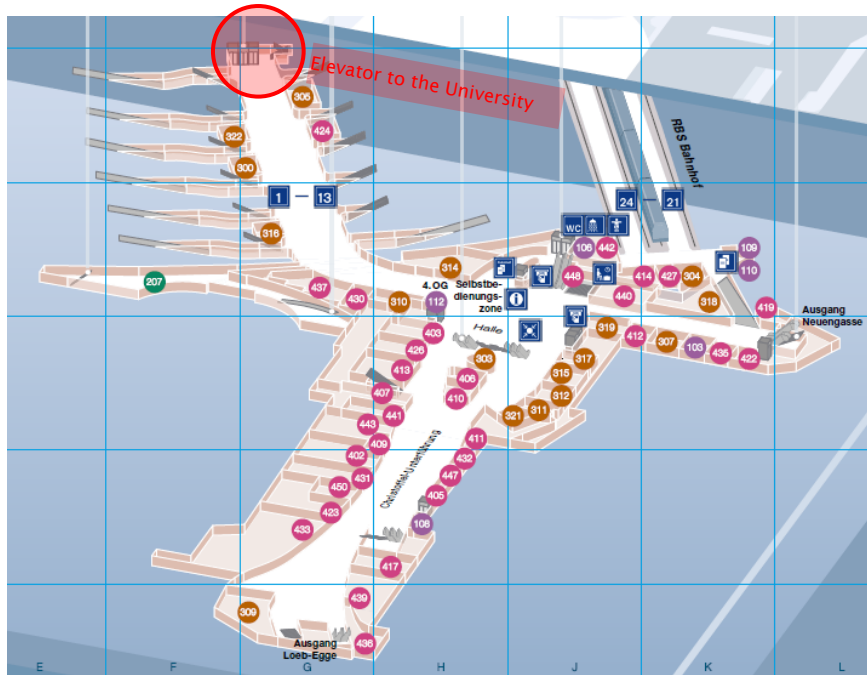
CHECK-IN AT TO SUMMER SCHOOL ON MONDAY 7.08.2023 13:00

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)



OE2 20.06.2023