



PhD Summer School Mont-Soleil

12th - 16th/17th August 2019

Field-Based Insights into the Implementation of Renewable Energies

PROGRAM

Main conference

Monday 12.08 Climate and Environmental Physics

- 13:00 Check-in at University of Bern, Climate and Environmental Physics
- 14:00 Introduction**
Dr. Martin Pfisterer, Co-chairman / President Société Mont-Soleil, Switzerland
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne, Switzerland
- 14:30 Climate Change and the 1.5°C Goal of the Paris Agreement**
Prof. Thomas Stocker, University of Bern, Switzerland
- 16:00 Visit to the Laboratories of Climate and Environmental Physics**
- 17:30 Departure to Mont-Soleil
- 18:30 Hotel check-in, Auberge de l'Assesseur Mont-Soleil
- 19:30 Welcome dinner by the city of Saint-Imier

Tuesday 13.08 Photovoltaics and Hydropower

- 08:00 Opening, Energy Region Mont-Soleil**
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne, Switzerland
Dr. Martin Pfisterer, Co-chairman / President Société Mont-Soleil, Switzerland
- 08:30 Mont-Soleil PV Plant – Layout, Long-term Measurements, Life Cycle Analysis**
Dr. Rudolf Minder and Dr. Jakob Vollenweider, Société Mont-Soleil, Switzerland
Manuel Lanz and Thomas Schott, Bern Univ. Applied Sciences, Burgdorf, Switzerland
- 10:00 Mont-Soleil PV Plant – Visit and Exercises**
Dr. Rudolf Minder and Dr. Jakob Vollenweider, Société Mont-Soleil, Switzerland
Manuel Lanz and Thomas Schott, Bern Univ. Applied Sciences, Burgdorf, Switzerland
- 11:15 PlanetSolar, the First around the World Tour with a Solar Boat**
Christian Ochsenbein, technical engineer and member of the boat crew
- 12:00 Lunch
- 13:00 Design of High Efficiency Solar Cells**
Dr. Mathieu Boccard, CSEM / EPFL, Neuchâtel, Switzerland
- 14:30 Strategies for Hydropower Deployment**
Martin Bölli, Swiss Small Hydro Association, Switzerland
- 15:30 Excursion and visit to a hydropower plant at the Doubs river, countrystyle dinner**
Cédric Zbinden, CEO La Goule SA, Saint-Imier
- 20:00 Return to the hotel

Wed. 14.08 Wind Energy

- 08:00 JUVENT Wind Power Plant, Landscape Challenges**
Dr. Martin Pfisterer, Co-chairman / founding President of JUVENT SA, Switzerland
- 09:30 Return to Mont-Soleil
- 10:00 Wind Turbine Design and Repowering**
Dr. Jakob Vollenweider, former general manager of JUVENT SA, Switzerland
- 11:00 Assessing Wind Resources in Complex Terrain**
Sara Koller, Meteotest, Bern, Switzerland
- 12:00 Lunch
- 13:00 Multiscale Modeling Framework for Wind Power Forecasting**
Dr. Jiannong Fang, Wind Engineering and Renewable Energy Lab, EPFL, Switzerland
- 14:30 Technological Development in the JUVENT Windfarm 1996 – 2019 including Repowering**
Dr. Jakob Vollenweider, former general manager of JUVENT SA , Switzerland
- 15:30 Visit to JUVENT windfarm
- 18:00 Return to the hotel

Thurs. 15.08 Electrical Grid Integration and Energy Storage

- 08:00 Introduction**
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne, Switzerland
- 08:15 Planning and Control of Active Power Networks**
Prof. Mario Paolone, Distributed Electric Systems Lab, EPFL, Lausanne, Switzerland
- 10:30 Classical and Advanced Power Electronic Solutions for the Network Integration**
Prof. Drazen Dujic, Power Electronics Laboratory, EPFL, Lausanne, Switzerland
- 12:30 Lunch
- 13:30 Power Quality in Distribution Grids Related to RES and Power Electronics**
Prof. Michael Höckel, Power Systems Lab, Biel/Bienne, Switzerland
- 15:00 Energy Storage with Batteries, Classical Solutions and Modern Components**
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne, Switzerland
- 16:00 Machine Learning Solutions to Predict Battery Lifespan and Optimize Energy Consumption**
Prof. Stefano Carrino, HE-Arc, Saint-Imier, Switzerland
- 17:00 Departure to Saint-Imier
- 17:30 Energy Autonomous Concept for Cheese Making**
Cédric Spielhofer, CEO Fromageries Spielhofer, Saint-Imier, Switzerland
- 18:30 Cheese fondue dinner
- 20:00 Return to the hotel

Friday 16.08 Energy Storage and Closing Ceremony

- 07:45** Transfer to Biel/Bienne
- 09:00 Energy Storage and Efficiency – The Theory of the Ragone Representation**
Prof. hon. Alfred Rufer, Co-chairman / EPFL, Lausanne, Switzerland
- 10:30 Battery Modeling with Application to High Energy Density Systems**
Dr. Andreas Hutter, PV-Center, CSEM, Neuchâtel, Switzerland
- 11:30 Aging Phenomena of Li-Ion Batteries and Life Cycle Modeling**
Prof. Andrea Vezzini, Bern University of Applied Sciences, Biel/Bienne, Switzerland
- 12:30 lunch / during lunch in small groups:
Visit to the BFH-CSEM Energy Storage Research Laboratories
- 14:30 Closing ceremony**
End of summer school

Post conference (optional)

Friday 16.08 Transfer to Grindelwald / glacier retreat and district heating

- 15:00 Departure to Grindelwald (Grund)
- 17:00 **Glacier Retreat, District Heating, Plant Visit** (with aperitif)
Dr. Martin Pfisterer, Co-chairman / founding President Holzwärme Grindelwald AG
- 18:00 Hotel check-in, Jungfrau tourist info, alpine dinner

Saturday 17.08 High Altitude Research Station Jungfrauoch 3500 m a.s.l.

- 08:00 Departure from Grindelwald (Grund) to Jungfrauoch
 - 09:30 **High Altitude Research Station**
Prof. Markus Leuenberger, Director, University of Berne, Switzerland
Visit to the High Altitude Research Lab
 - 12:00 End of post-conference program
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Administration

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