

5<sup>th</sup> International Workshop on Geoelectric Monitoring  
GELMON 2020, online, 18.11. - 20.11.2020



## GENERAL WORKSHOP PROGRAM OVERVIEW

Wednesday, Nov. 18<sup>th</sup>

09:00 – 09:20	Workshop Opening
09:20 – 10:55	Monitoring of Permafrost
11:10 – 12:45	Monitoring of Contaminated Sites I
14:00 – 15:35	Monitoring of Embankment

Thursday, Nov. 19<sup>th</sup>

09:00 – 10:35	Monitoring of Contaminated Sites II
11:00 – 12:35	Data Processing and Inversion
14:00 – 15:10	Further topics I
15:25 – 16:35	Further topics II
16:35 – 17:00	Workshop Closing

# Wednesday, Nov. 18<sup>th</sup>

09:00-09:20	<b>Workshop Opening</b>		
<b>Monitoring of Permafrost</b>			
09:20-09:40	Permafrost monitoring through resistivity time-series analysis: the PERMOS ERT Database	C. Hilbich, C. Pellet, C. Mollaret, B. Staub, J. Noetzli, C. Hauck	1
09:40-10:00	Towards a geoelectrical database for permafrost monitoring to enable the processing and repetition of historical measurements	C. Mollaret, C. Hilbich, C. Pellet, C. Hauck	2
10:00-10:20	Geophysical monitoring of hydrological dynamics in a transitional permafrost system	S. Uhlemann, B. Dafflon, J. Peterson, C. Ulrich, I. Shirley, S. Michail, S. S. Hubbard	3
10:20-10:40	Seasonal and annual dynamics of frozen ground in a mountain permafrost site in the Italian Alps detected by Spectral Induced Polarization	T. Maierhofer, T. Katona, U. Morra Di Cella, P. Pogliotti, E. Drigo, C. Hilbich, C. Hauck, A. Flores-Orozco	4
10:40-10:55	<b>Discussion</b>		
10:55-11:10	<b>Coffee Break</b>		
<b>Monitoring of Contaminated Sites I</b>			
11:10-11:30	Cross-borehole complex geo-electrical monitoring of treatment zone installation in an urban area: Case study from Farum, Denmark	L. Lévy, T. Bording, A. V. Christiansen, G. Fiandaca, R. Thalund-Hansen, L. Madsen, P. L. Bjerg	5
11:30-11:50	Cross-borehole electrical resistivity tomography for monitoring in-situ chemical oxidation remediation: Large-scale project at Kærgård Plantation, Denmark.	L. Lévy, A. K. Kühl, T. Bording, L. Madsen, A. V. Christiansen, J. F. Christensen	6
11:50-12:10	Geoelectrical monitoring for following changes due to in-situ bioremediation of chlorinated solvents contamination	A. Nivorlis, T. Dahlin, M. Rossi	7
12:10-12:30	Investigating the coupled thermo-hydro-mechanical behavior for nuclear waste storage using resistivity monitoring and distributed fiber optic sensing	S. Uhlemann, J. Wang, S. Otto, B. Dozier, K. Kuhlmann, Y. Wu	8
12:30-12:45	<b>Discussion</b>		
12:45-14:00	<b>Lunch Break</b>		
<b>Monitoring of Embankment</b>			
14:00-14:20	3D Resistivity Monitoring for Seepage Assessment at an Earth Dam Abutment: System Design and Early Results	K. E. Butler, D. E. Boulay	9
14:20-14:40	Reservoir leaking assessment using electrical resistivity imaging (ERI) with capacitively-coupled system	J.-R. Choi, S.-S. Kim, N. Sung	10
14:40-15:00	Pre-study for geoelectrical monitoring for detection of internal defects and anomalous seepage in the Älvkarleby test embankment dam	R. Nooroz, T. Dahlin, P.-I. Olsson, A. Nivorlis, T. Günther, C. Bernstone	11
15:00-15:20	The latest installation of G.RE.T.A. along the tailings dam of a copper mine in Chile	G. Tresoldi, A. Hojat, L. Cordova, L. Zanzi	12
15:20-15:35	<b>Discussion</b>		

# Thursday, Nov. 19<sup>th</sup>

## Monitoring of Contaminated Sites II

09:00-09:20	Geo-electrical monitoring of H <sub>2</sub> S mineralization into pyrite, upon re-injection in basalts at Nesjavellir geothermal site, Iceland	L. Lévy, P. K. Maurya, G. Fiandaca, T. S. Bording, L. M. Madsen, L. Gailler, S. Byrdina, J. E. Jónsson, Á. Benediktsdóttir, K. Árnason	13
09:20-09:40	Time-lapse monitoring of landfill leachate through time-domain induced polarization with temperature corrections	T. Bording, L. Lévy, G. Fiandaca	14
09:40-10:00	Monitoring the “pollutant” flow in a supervised test-site using 4-D Electrical Resistivity Tomography in boreholes.	N. Papadopoulos, K. Simyrdanis	15
10:00-10:20	Monitoring System for remediation of a brownfield	K. Tsakirmpaloglou, T. Martin, O. Kaufmann, P. Goderniaux	16
10:20-10:35	<b>Discussion</b>		

10:35-11:00	<b>Coffee Break</b>
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## Data Processing and Inversion

11:00-11:20	Generalized Minimum Support Norm for automatic data processing	G. Fiandaca, Line M. Madsen, A. Kühl, T. S. Bording	17
11:20-11:40	Generalized Minimum Support Norm for time-lapse inversion	G. Fiandaca, T. S. Bording, L. Lévy, L. M. Madsen	18
11:40-12:00	Inversion Based Processing of Time Domain Induced polarization data	A. K. Kühl, T. Bording, G. Fiandaca	19
12:00-12:20	Application of a novel data analysis for time lapse multi frequency data in Induced Polarization imaging	T. Katona, T. Maierhofer, P. Oberender, A. Flores-Orozco	20
12:20-12:35	<b>Discussion</b>		

12:35-14:00	<b>Lunch Break</b>
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# Thursday, Nov. 19<sup>th</sup>

Further topics			
14:00-14:20	ERT monitoring at a landslide-prone hillslope in the Napf region (Switzerland) for regional landslide early warning	A. Wicki, C. Hauck	21
14:20-14:40	Geoelectric monitoring during pumping tests	B. Jochum, D. Ottowitz, A. Römer, G. Bieber, S. Pfeiler	22
14:40-15:00	Electrical and electromagnetic monitoring for engineering applications: a lab test for evaluating the concrete curing phenomenon with 4D-ERT	L. Capozzoli, G. De Martino, V. Giampaolo, E. Rizzo	23
15:00-15:10	<b>Discussion</b>		
<b>Coffee Break</b>			
15:25-15:45	Estimation of water content distribution using time-lapse electrical resistivity tomography and ensemble Kalman filter	A. Isabelle, G. Fabien-Ouellet, T. Pabst, A. Dimech, L. Zhen Cheng	24
15:45-16:05	Geoelectrical monitoring for detecting soil moisture changes in the main rooting zone of forest sites with different lithology in Lower Franconia, Germany	J. Fäth, J. Kunz, C. Kneisel	25
16:05-16:25	Hydrogeological and geoelectrical monitoring of mining reclamation covers to assess the accuracy of moisture content estimations	A. Dimech, L. Zhen Cheng, B. Bussière, M. Chouteau, G. Fabien-Ouellet, A. Isabelle	26
16:25-16:35	<b>Discussion</b>		
16:35-17:00	<b>Workshop Closing</b>		

## Workshop procedure information

### GENERAL

The workshop will be held online

The workshop will start on Nov. 18<sup>th</sup>, 09:00 a.m. and close on Nov. 19<sup>th</sup>, 17:00 p.m.

Each presentation has a time slot of 15 minutes + 5 minutes for questions.

A web conference link will be sent a few days ahead  
(On Nov. 17<sup>th</sup>, 9:00 am to 12:00 (noon) we will open a test web conference for people wanting to check their equipment)

Due to data privacy restrictions, the workshop will not be streamed via YouTube channel

### DETAILS

Questions after a talk or during the discussions can be announced by virtual hand raise or via the chat-option.

### **Important**

Please mute your microphone when not speaking!