

# Sebastian Uhlemann

POSTDOCTORAL RESEARCH SCHOLAR · PH.D., M.SC., B.SC.

Lawrence Berkeley National Laboratory, Berkeley, California, USA

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## Education

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### ETH Zurich

Zurich, Switzerland

PH. D. IN APPLIED GEOPHYSICS

Sep. 2013 - Jan. 2018

- Thesis title: *Geoelectrical monitoring of moisture driven processes in natural and engineered slopes*

Advisors: Prof. Hansruedi Maurer, Dr. Jonathan Chambers

This thesis advances “landslide geophysics” by developing methodologies for a robust and cost-effective characterization and monitoring of subsurface landslide processes. In doing so it addresses some of the inherent difficulties of geophysical monitoring of landslides. Three key challenges are addressed: (i) accounting for electrode displacements, (ii) improved geoelectrical imaging through structurally constrained inversion using seismic data, and (iii) optimized survey design to improve image resolution whilst reducing installation costs. The results bring geoelectrics one step closer to being used as an early-warning tool

### TU Delft, ETH Zurich, RWTH Aachen

Delft, The Netherlands

Zurich, Switzerland

Aachen, Germany

M. SC. IN APPLIED GEOPHYSICS

Aug. 2010 - Aug. 2012

- Graduated with distinction (cum laude)
- Thesis title: *On the Suitability of Capacitive Resistivity Imaging (CRI) for Permafrost Monitoring*

Advisors: Prof. Dr. Alan G. Green, Dr. Oliver Kuras

CRI is a method that tries to emulate conventional dc resistivity measurements without the need for galvanic coupling. How this method performs within the context of permafrost monitoring and what are its limitation was investigated by the use of finite-element numerical modelling of complex acquisition geometries and by laboratory experiments.

### Technische Universität Bergakademie Freiberg

Freiberg, Germany

B. SC. IN GEOINFORMATION SCIENCES AND GEOPHYSICS

Oct. 2007 - Aug. 2010

- Thesis title: *Einfluss einer CO<sub>2</sub>-Phase auf die elektrische Leitfähigkeit salinärer Porenwässer*

Advisors: Prof. Dr. Klaus Spitzer, Dr. Jana Börner

The solution of CO<sub>2</sub> in brines causes a change of the electrical conductivity. This change by itself and its possible application for monitoring CO<sub>2</sub> sequestration was investigated by means of numerical simulation and experimental work.

## Skills

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<b>Programming</b>	C, C++, C#, Fortran, Python, LaTeX
<b>Scientific</b>	Matlab, R, Comsol, Surfer, ParaView, ArcGis
<b>Geophysics</b>	Res2D/3DInv, E4D, pyGIMLi, Reflexw, Vista, OpenDtect, MSNoise, ObsPy
<b>Graphics</b>	Corel Draw, Inkscape, Generic Mapping Tools (GMT)
<b>Languages</b>	English, German, Spanish

## Experience

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### Lawrence Berkeley National Laboratory

Berkeley, CA, USA

POSTDOCTORAL RESEARCH SCHOLAR

Jun. 2018 - PRESENT

- Linking geophysical data with remote sensing data to improve hydrologic and atmospheric flow models of mountainous watersheds
- Geophysical characterization of permafrost distribution and links to vegetation and subsurface flow

### British Geological Survey

Nottingham, UK

RESEARCH GEOPHYSICIST

Sep. 2012 - May 2018

- Development of electrical resistivity monitoring approaches, particularly regarding implementation on landslides
- Design/implementation/guidance of geophysical field campaigns worldwide
- Management/improvement of field observatories employing time-lapse electrical resistivity tomography and geotechnical sensors
- Laboratory testing to establish property relationships between geophysical and geotechnical properties
- Publication of research efforts

### Dresdner Grundwasserforschungszentrum

Dresden, Germany

RESEARCH ASSISTANT

Dec. 2009 - Apr. 2010

- Numerical simulations to improve the design of hydrogeophysical and groundwater logging tools

- Development of an "Interactive Petrophysics"-plugin for permeability estimations from pore pressure data

## Teaching Experience

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### Invited Lecture: *Hydrogeophysics*

UNIVERSITY OF MANCHESTER

- Lecture as part of the "Hydrology" module

Manchester, UK

2017

### Co-supervisor M.Sc. Project

ETH ZURICH

- Co-supervision of M.Sc. project studying the glaciotectonic setting of the Norfolk Coast, UK, using 3D ERT and 3D GPR data

Zurich, Switzerland

2017

### Teaching Demonstrator

NOTTINGHAM UNIVERSITY

- Assistance for geophysical field and laboratory work for undergraduate course module "Environmental Geophysics"

Nottingham, UK

2016 - 2017

### Invited Lecture: *Environmental Geophysics*

ROYAL UNIVERSITY OF PHNOM PENH

- Part of a Short Course "Environmental Geosciences" organized by the University of Manchester

Phnom Penh, Cambodia

2015

### Co-supervisor M.Sc. Projects

ETH ZURICH

- Co-supervision of two M.Sc. research projects involving analysis of capacitive resistivity data to study permafrost processes, and an extensive seismic survey using P- and S-wave refraction to study the elastic properties of an active landslide

Zurich, Switzerland

2014

### Teaching Demonstrator

ETH ZURICH

- Assistance in data acquisition and processing for geophysical fieldwork of M.Sc. course in Applied Geophysics

Zurich, Switzerland

2014 - 2017

## Awards & Scholarships

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### AWARDS

- 2015 **Best Paper Award**, 21st European Meeting of Environmental and Engineering Geophysics
- 2014 **Best Early Stage Researcher Poster**, EU-COST TU2012 annual workshop
- 2014 **Best Paper Award**, 20th European Meeting of Environmental and Engineering Geophysics

Turin, Italy

Porto, Portugal

Athens, Greece

### SCHOLARSHIPS

- 2014 **LARAM school 2015**, Scholarship to attend the prestigious "Landslide Risk Assessment and Mitigation" (LARAM) summer school

Chengdu, China

2010 - 2012 **Full M.Sc. tuition fee scholarship**, awarded by E.ON

## Professional Association

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**Reviewer**, Science of the Total Environment, Geophysical Journal International, Geomorphology, Journal of Hydrology, Geomatics, Natural Hazards and Risk, Journal of Applied Geophysics, Interpretation, Near Surface Geophysics, Journal of Environmental and Engineering Geophysics, Pure and Applied Geophysics

**Guest editor**, Special Issue: Mining and Mineral Exploration Geophysics in *Minerals*

**Member**, American Geophysical Union (AGU), European Association of Geoscientists and Engineers (EAGE), European Geosciences Union (EGU)

### First-Author Publications

- Uhlemann, S.** and O. Kuras (2014). “Numerical Simulations of Capacitive Resistivity Imaging (CRI) Measurements”. In: *Near Surface Geophysics* 12.2028, pp. 523–537. ISSN: 18730604. DOI: 10.3997/1873-0604.2014008.
- Uhlemann, S.**, P. B. Wilkinson, J. E. Chambers, H. Maurer, A. J. Merritt, D. A. Gunn, and P. I. Meldrum (2015). “Interpolation of landslide movements to improve the accuracy of 4D geoelectrical monitoring”. In: *Journal of Applied Geophysics* 121, pp. 93–105. ISSN: 09269851. DOI: 10.1016/j.jappgeo.2015.07.003.
- Uhlemann, S.**, S. Hagedorn, B. Dashwood, H. Maurer, D. Gunn, T. Dijkstra, and J. Chambers (2016). “Landslide characterization using P- and S-wave seismic refraction tomography – The importance of elastic moduli”. In: *Journal of Applied Geophysics* 134, pp. 64–76. ISSN: 09269851. DOI: 10.1016/j.jappgeo.2016.08.014.
- Uhlemann, S.**, A. Smith, J. Chambers, N. Dixon, T. Dijkstra, E. Haslam, P. Meldrum, A. Merritt, D. Gunn, and J. Mackay (2016). “Assessment of ground-based monitoring techniques applied to landslide investigations”. In: *Geomorphology* 253, pp. 438–451. ISSN: 0169555X. DOI: 10.1016/j.geomorph.2015.10.027.
- Uhlemann, S.**, J. P. R. Sorensen, A. R. House, P. B. Wilkinson, C. Roberts, D. C. Goody, A. M. Binley, and J. E. Chambers (2016). “Integrated time-lapse geoelectrical imaging of wetland hydrological processes”. In: *Water Resources Research* 52.3, pp. 1607–1625. ISSN: 00431397. DOI: 10.1002/2015WR017932.
- Uhlemann, S.**, J. Chambers, P. Wilkinson, H. Maurer, A. Merritt, P. Meldrum, O. Kuras, D. Gunn, A. Smith, and T. Dijkstra (2017). “Four-dimensional imaging of moisture dynamics during landslide reactivation”. In: *Journal of Geophysical Research: Earth Surface* 122.1, pp. 398–418. ISSN: 21699003. DOI: 10.1002/2016JF003983.
- Uhlemann, S.**, O. Kuras, L. A. Richards, E. Naden, and D. A. Polya (2017). “Electrical Resistivity Tomography determines the spatial distribution of clay layer thickness and aquifer vulnerability, Kandal Province, Cambodia”. In: *Journal of Asian Earth Sciences*. ISSN: 13679120. DOI: 10.1016/j.jseaes.2017.07.043.
- Uhlemann, S.**, P. B. Wilkinson, H. Maurer, F. M. Wagner, T. C. Johnson, and J. E. Chambers (2018). “Optimized survey design for Electrical Resistivity Tomography: combined optimization of measurement configuration and electrode placement”. In: *Geophysical Journal International* in press. ISSN: 0956-540X. DOI: 10.1093/gji/ggy128.

### Other Publications

- Chambers, J. E., P. B. Wilkinson, **S. Uhlemann**, J. P. R. Sorensen, C. Roberts, A. J. Newell, W. O. C. Ward, A. Binley, P. J. Williams, D. C. Goody, G. Old, and L. Bai (2014). “Derivation of lowland riparian wetland deposit architecture using geophysical image analysis and interface detection”. In: *Water Resources Research* 50.7, pp. 5886–5905. ISSN: 00431397. DOI: 10.1002/2014WR015643.
- Glendinning, S., P. Hughes, P. Helm, J. Chambers, J. Mendes, D. Gunn, P. Wilkinson, and **S. Uhlemann** (2014). “Construction, management and maintenance of embankments used for road and rail infrastructure: implications of weather induced pore water pressures”. In: *Acta Geotechnica* 9.5, pp. 799–816. ISSN: 1861-1125. DOI: 10.1007/s11440-014-0324-1.
- Gunn, D. A., J. E. Chambers, **S. Uhlemann**, P. B. Wilkinson, P. I. Meldrum, T. A. Dijkstra, E. Haslam, M. Kirkham, J. Wragg, S. Holyoake, P. N. Hughes, R. Hen-Jones, and S. Glendinning (2014). “Moisture monitoring in clay embankments using electrical resistivity tomography”. In: *Construction and Building Materials* 92, pp. 82–94. ISSN: 09500618. DOI: 10.1016/j.conbuildmat.2014.06.007.
- Hen-Jones, R., P. Hughes, S. Glendinning, D. Gunn, J. Chambers, P. Wilkinson, and **S. Uhlemann** (2014). “Determination of moisture content and soil suction in engineered fills using electrical resistivity”. In: *Unsaturated Soils: Research & Applications*. CRC Press, pp. 1695–1699. ISBN: 9781138001503. DOI: 10.1201/b17034-247.
- Loke, M. H., P. B. Wilkinson, **S. Uhlemann**, J. E. Chambers, and L. S. Oxby (2014). “Computation of optimized arrays for 3-D electrical imaging surveys”. In: *Geophysical Journal International* 199.3, pp. 1751–1764. ISSN: 0956-540X. DOI: 10.1093/gji/ggu357.
- Chambers, J. E., P. I. Meldrum, P. B. Wilkinson, W. Ward, C. Jackson, B. Matthews, P. Joel, O. Kuras, L. Bai, **S. Uhlemann**, and D. Gunn (2015). “Spatial monitoring of groundwater drawdown and rebound associated with quarry dewatering using automated time-lapse electrical resistivity tomography and distribution guided clustering”. In: *Engineering Geology* 193.October, pp. 412–420. ISSN: 00137952. DOI: 10.1016/j.enggeo.2015.05.015.
- Loke, M. H., P. B. Wilkinson, J. E. Chambers, **S. Uhlemann**, and J. P. R. Sorensen (2015). “Optimized arrays for 2-D resistivity survey lines with a large number of electrodes”. In: *Journal of Applied Geophysics* 112, pp. 136–146. ISSN: 09269851. DOI: 10.1016/j.jappgeo.2014.11.011.

- Wilkinson, P. B., **S. Uhlemann**, J. E. Chambers, P. I. Meldrum, and M. H. Loke (2015). “Development and testing of displacement inversion to track electrode movements on 3-D electrical resistivity tomography monitoring grids”. In: *Geophysical Journal International* 200.3, pp. 1566–1581. ISSN: 0956-540X. DOI: 10.1093/gji/ggu483.
- Wilkinson, P. B., **S. Uhlemann**, P. I. Meldrum, J. E. Chambers, S. Carrière, L. S. Oxby, and M. H. Loke (2015). “Adaptive time-lapse optimized survey design for electrical resistivity tomography monitoring”. In: *Geophysical Journal International* 203.1, pp. 755–766. ISSN: 0956-540X. DOI: 10.1093/gji/ggv329.
- Barron, A., **S. Uhlemann**, G. Pook, and L. Oxby (2016). “Investigation of suspected gulls in the Jurassic limestone strata of the Cotswold Hills, Gloucestershire, England using electrical resistivity tomography”. In: *Geomorphology* 268, pp. 1–13. ISSN: 0169555X. DOI: 10.1016/j.geomorph.2016.05.028.
- Bergamo, P., B. Dashwood, **S. Uhlemann**, R. Swift, J. E. Chambers, D. A. Gunn, and S. Donohue (2016a). “Time-lapse monitoring of fluid-induced geophysical property variations within an unstable earthwork using P-wave refraction”. In: *Geophysics* 81.4, EN17–EN27. ISSN: 0016-8033. DOI: 10.1190/geo2015-0276.1.
- Bergamo, P., B. Dashwood, **S. Uhlemann**, R. Swift, J. E. Chambers, D. A. Gunn, and S. Donohue (2016b). “Time-lapse monitoring of climate effects on earthworks using surface waves”. In: *GEOPHYSICS* 81.2, EN1–EN15. ISSN: 0016-8033. DOI: 10.1190/geo2015-0275.1.
- Kuras, O., P. B. Wilkinson, P. I. Meldrum, L. S. Oxby, **S. Uhlemann**, J. E. Chambers, A. Binley, J. Graham, N. T. Smith, and N. Atherton (2016). “Goelectrical monitoring of simulated subsurface leakage to support high-hazard nuclear decommissioning at the Sellafield Site, UK”. In: *Science of the Total Environment* 566-567, pp. 350–359. ISSN: 18791026. DOI: 10.1016/j.scitotenv.2016.04.212.
- Merritt, A. J., J. E. Chambers, P. B. Wilkinson, L. J. West, W. Murphy, D. Gunn, and **S. Uhlemann** (2016). “Measurement and modelling of moisture–electrical resistivity relationship of fine-grained unsaturated soils and electrical anisotropy”. In: *Journal of Applied Geophysics* 124, pp. 155–165. ISSN: 09269851. DOI: 10.1016/j.jappgeo.2015.11.005.
- Murton, J. B., O. Kuras, M. Krautblatter, T. Cane, D. Tschofen, **S. Uhlemann**, S. Schober, and P. Watson (2016). “Monitoring rock freezing and thawing by novel geoelectrical and acoustic techniques”. In: *Journal of Geophysical Research: Earth Surface* 121.12, pp. 2309–2332. ISSN: 21699003. DOI: 10.1002/2016JF003948.
- Wilkinson, P. B., J. Chambers, **S. Uhlemann**, P. Meldrum, A. Smith, N. Dixon, and M. H. Loke (2016). “Reconstruction of landslide movements by inversion of 4-D electrical resistivity tomography monitoring data”. In: *Geophysical Research Letters* 43.3, pp. 1166–1174. ISSN: 00948276. DOI: 10.1002/2015GL067494.
- Boyle, A., P. B. Wilkinson, J. E. Chambers, P. I. Meldrum, **S. Uhlemann**, and A. Adler (2017). “Jointly reconstructing ground motion and resistivity [0.1em]for ERT-based slope stability monitoring”. In: *Geophysical Journal International* November. ISSN: 0956-540X. DOI: 10.1093/gji/ggx453.
- McLachlan, P., J. Chambers, S. Uhlemann, and A. Binley (2017). “Geophysical characterisation of the groundwater-surface water interface”. In: *Advances in Water Resources* 109.April, pp. 302–319. ISSN: 03091708. DOI: 10.1016/j.advwatres.2017.09.016.
- Richards, L. A., D. Magnone, C. Sovann, C. Kong, **S. Uhlemann**, O. Kuras, B. E. van Dongen, C. J. Ballentine, and D. A. Polya (2017). “High resolution profile of inorganic aqueous geochemistry and key redox zones in an arsenic bearing aquifer in Cambodia”. In: *Science of The Total Environment* 590-591, pp. 540–553. ISSN: 00489697. DOI: 10.1016/j.scitotenv.2017.02.217.
- Smethurst, J. A., A. Smith, **S. Uhlemann**, C. Wooff, J. Chambers, P. Hughes, S. Lenart, H. Saroglou, S. Springman, H. Lofroth, and D. Hughes (2017). “Current and future role of instrumentation and monitoring in the performance of transport infrastructure slopes”. In: *Quarterly Journal of Engineering Geology and Hydrogeology*.
- Tso, C.-h. M., O. Kuras, P. B. Wilkinson, **S. Uhlemann**, J. E. Chambers, P. I. Meldrum, J. Graham, E. F. Sherlock, and A. Binley (2017). “Improved characterisation and modelling of measurement errors in electrical resistivity tomography (ERT) surveys”. In: *Journal of Applied Geophysics* 146, pp. 103–119. ISSN: 09269851. DOI: 10.1016/j.jappgeo.2017.09.009.
- Bellanova, J., G. Calamita, A. Giocoli, R. Luongo, M. Macchiato, A. Perrone, **S. Uhlemann**, and S. Piscitelli (2018). “Electrical resistivity imaging for the characterization of the Montaguto landslide (southern Italy)”. In: *Engineering Geology* 243.April 2017, pp. 272–281. ISSN: 00137952. DOI: 10.1016/j.enggeo.2018.07.014.
- Gunn, D., J. Chambers, B. Dashwood, A. Lacinska, T. Dijkstra, **S. Uhlemann**, R. Swift, M. Kirkham, A. Milodowski, J. Wragg, and S. Donohue (2018). “Deterioration model and condition monitoring of aged railway embankment using non-invasive geophysics”. In: *Construction and Building Materials* 170, pp. 668–678. ISSN: 09500618. DOI: 10.1016/j.conbuildmat.2018.03.066.

## First-Author Proceedings

- Uhlemann, S.**, O. Kuras, and A. Green (2012). “Numerical simulation of capacitively coupled resistivity imaging measurements on rock samples”. In: *Near Surface Geoscience*. Paris, France, p. 4.
- Uhlemann, S.**, J. Chambers, P. Wilkinson, A. Merritt, P. Meldrum, O. Kuras, L. Oxby, D. Gunn, and M. Kirkham (2013). “Estimation of electrode positions from sparsely distributed reference points for long term geoelectric monitoring of an active landslide”. In: *2nd International Workshop on Geoelectrical Monitoring*. Vienna.
- Uhlemann, S.**, J. Sorensen, J. Chambers, P. Wilkinson, L. Oxby, D. Goody, G. Old, O. Kuras, and P. Meldrum (2013). “Imaging of hydrological processes in a lowland wetland of the Lambourn river, Berkshire, UK”. In: *2nd International Workshop on Geoelectrical Monitoring*. Vienna.
- Uhlemann, S.**, P. Wilkinson, J. Chambers, P. Meldrum, O. Kuras, and L. Oxby (2013). “Estimation of Electrode Movements from Sparsely Distributed Reference Points for Time-lapse ERT”. In: *Near Surface Geoscience*. Bochum, Germany, p. 4. DOI: 10.3997/2214-4609.20131349.
- Uhlemann, S.**, O. Kuras, E. Haslam, and P. I. Meldrum (2013). “Verifying multisensor capacitive resistivity imaging (CRI) for monitoring rock-freezing experiments”. In: *SEG-AGU Joint Workshop on Cryosphere Geophysics: Understanding a Changing Climate with Subsurface Imaging*. Boise, Idaho, USA, p. 2.
- Uhlemann, S.**, J. Chambers, A. Merritt, P. Wilkinson, P. Meldrum, D. Gunn, H. Maurer, and N. Dixon (2014). “Integrated Interpretation of Geophysical, Geotechnical, and Environmental Monitoring Data to Define Precursors for Landslide Activation”. In: *AGU Fall Meeting*. San Francisco, USA.
- Uhlemann, S.**, J. Sorensen, J. Chambers, P. Wilkinson, and D. Goody (2014). “Geoelectrical Monitoring of Complex Hydrological Processes in a Riparian Wetland”. In: *Near Surface Geoscience*. September 2014. Athens, pp. 14–18. doi: 10.3997/2214-4609.20141954.
- Uhlemann, S.**, J. Chambers, P. Wilkinson, S. Hagedorn, H. Maurer, T. Dijkstra, B. Dashwood, and D. Gunn (2015). “Active landslide monitoring using structurally constraint 4D ERT monitoring”. In: *3rd Internat. Workshop on Geoelectrical Monitoring*. Vienna.
- Uhlemann, S.**, J. Chambers, A. Alonso, A. De Gea, and W. Falck (2015). “Imaging of karst features to guide mining activities in a marble quarry by means of 3D ERT”. In: *Near Surface Geoscience 2015 - 21st European Meeting of Environmental and Engineering Geophysics*. ISBN: 9781510814127.
- Uhlemann, S.**, J. Chambers, S. Hagedorn, H. Maurer, P. Wilkinson, T. Dijkstra, B. Dashwood, A. Merritt, and D. Gunn (2015). “Structurally constrained 4D ERT monitoring to image hydrological processes leading to landslide reactivation”. In: *Near Surface Geoscience 2015 - 21st European Meeting of Environmental and Engineering Geophysics*. ISBN: 9781510814127.
- Uhlemann, S.**, J. E. Chambers, P. I. Meldrum, P. B. Wilkinson, D. A. Gunn, D. Hutchinson, R. Swift, T. A. Dijkstra, and O. Kuras (2016). “Imaging of Moisture Dynamics within an Operational Railway Cutting - The Effects of Vegetation”. In: *Near Surface Geoscience 2016*. Barcelona. DOI: 10.3997/2214-4609.201602050.
- Uhlemann, S.**, J. E. Chambers, P. B. Wilkinson, M. Kirkham, and M. Beamish (2016). “Archaeological and Resources Assessment of Sand and Gravel Deposits Using 3D ERT and Automated Interface Detection”. In: *Near Surface Geoscience 2016*. Barcelona. DOI: 10.3997/2214-4609.201601941.
- Uhlemann, S.**, P. Wilkinson, P. Meldrum, A. Smith, N. Dixon, A. Merritt, R. Swift, J. Whiteley, D. Gunn, and J. Chambers (2017). “The Hollin Hill Landslide Observatory - a decade of geophysical characterization and monitoring”. In: *AGU Fall Meeting*. New Orleans.
- Uhlemann, S.**, P. Wilkinson, P. Meldrum, R. Swift, J. Whiteley, C. Inauen, D. Gunn, and J. Chambers (2018). “Developments of hydrogeophysical characterization and long-term monitoring for landslide early warning”. In: *EGU General Assembly*. Vienna, Austria.
- Uhlemann, S.**, J. Chambers, P. Meldrum, P. Wilkinson, R. Swift, and D. Gunn (2018). “Advanced geophysical monitoring of unstable slopes - towards improved early warning and risk mitigation”. In: *Symposium on the Application of Geophysics to Engineering and Environmental Problems*. Nashville.
- Uhlemann, S.**, O. Kuras, J. Chambers, P. Wilkinson, P. Meldrum, C. Inauen, R. Swift, B. Dashwood, and D. Gunn (2018). “Applied urban geophysics in the United Kingdom: recent advances in methods and applications”. In: *DGG - Annual Meeting*. Leoben, Austria.

## Other extended abstracts

- Chambers, J. E., P. I. Meldrum, P. B. Wilkinson, B. Matthews, O. Kuras, D. A. Gunn, **S. Uhlemann**, and L. Oxby (2013). “Automated Electrical Resistivity Tomography Monitoring of Quarry Dewatering”. In: *Near Surface Geoscience 2013*. Bochum, Germany, p. 4.
- Wilkinson, P. B., **S. Uhlemann**, J. E. Chambers, P. I. Meldrum, L. S. Oxby, and O. Kuras (2013). “Optimised sequential experimental design for geoelectrical resistivity monitoring surveys”. In: *Near Surface Geoscience 2013*. Bochum, Germany.
- Donohue, S., D. Gunn, P. Bergamo, E. Hughes, B. Dashwood, **S. Uhlemann**, J. Chambers, and D. Ward (2014). “Assessing climate effects on railway earthworks using MASW”. In: *Near Surface Geoscience 2014 - 20th European Meeting of Environmental and Engineering Geophysics*. Athens, Greece. ISBN: 9789462820272.
- Kuras, O., P. Wilkinson, P. Meldrum, L. Oxby, **S. Uhlemann**, J. Chambers, A. Binley, J. Graham, G. Dewey, and N. Atherton (2014). “Long-term geoelectrical monitoring to support nuclear decommissioning at the Sellafield Site, UK”. In: *Near Surface Geoscience 2014 - 20th European Meeting of Environmental and Engineering Geophysics*. Athens, Greece. ISBN: 9789462820272.
- Loke, M. H., **S. Uhlemann**, P. B. Wilkinson, and J. C. Chambers (2014). “Rapid calculation of optimized arrays for long 2-D survey lines”. In: *Near Surface Geoscience 2014 - 20th European Meeting of Environmental and Engineering Geophysics*. Athens, Greece. ISBN: 9789462820272.
- Wilkinson, P. B., **S. Uhlemann**, J. E. Chambers, and P. I. Meldrum (2014). “Inversion to recover electrode position displacements on 3D electrical resistivity tomography monitoring grids”. In: *Near Surface Geoscience 2014 - 20th European Meeting of Environmental and Engineering Geophysics*. Athens, Greece. ISBN: 9789462820272.
- Bergamo, P., S. Donohue, D. Gunn, B. Dashwood, **S. Uhlemann**, J. Chambers, and D. Ward (2015). “Time-lapse monitoring of the slopes of a heritage earthwork by means of near-surface seismic techniques”. In: *Near Surface Geoscience 2015 - 21st European Meeting of Environmental and Engineering Geophysics*. Turin, Italy. ISBN: 9781510814127.
- Kuras, O., P. Wilkinson, P. Meldrum, R. Swift, **S. Uhlemann**, J. Chambers, F. Walsh, J. Wharton, and N. Atherton (2015). “Performance assessment of novel electrode materials for long-term ERT monitoring”. In: *Near Surface Geoscience 2015 - 21st European Meeting of Environmental and Engineering Geophysics*. Turin, Italy. ISBN: 9781510814127.
- Wilkinson, P. B., O. Kuras, P. I. Meldrum, L. S. Oxby, **S. Uhlemann**, J. E. Chambers, and N. Atherton (2015). “4D ERT monitoring of simulated leaks from a nuclear storage silo at Sellafield, UK”. In: *Near Surface Geoscience 2015 - 21st European Meeting of Environmental and Engineering Geophysics*. Turin, Italy. ISBN: 9781510814127.
- Chambers, J. E., P. I. Meldrum, P. B. Wilkinson, D. Gunn, **S. Uhlemann**, O. Kuras, R. Swift, C. Inauen, and S. Butler (2016). “Remote Condition Assessment of Geotechnical Assets Using a New Low-power ERT Monitoring System”. In: *Near Surface Geoscience 2016*. Barcelona. DOI: 10.3997/2214-4609.201602048.