
Publications in Journals and Books with International Peer Review

25. **MARESCOT, L.**, PALMA LOPES, S., Non-invasive electrical property measurements on arbitrary 3D geometry structures. *NDT & E (Nondestructive Testing and Evaluation) international*: submitted.
24. **MARESCOT, L.**, EPARD, J.-L., MASSON, H., Geometry and kinematics of decametric detachment folds in the Swiss Plateau Molasse. *Journal of Structural Geology*: submitted
23. COSCIA, I., GREENHALGH, S., LINDE, N., DOETSCH, J., **MARESCOT, L.**, GUENTHER, T., VOGT, T., GREEN, A., 2011, 3D crosshole apparent resistivity static inversion and monitoring of a coupled river-aquifer system. *Geophysics*, 76, G49–G59.
22. SCAPOZZA, C., LAMBIEL, C., BARON, L., **MARESCOT, L.**, REYNARD, E., 2011, Internal structure and permafrost distribution in two alpine periglacial talus slopes, Valais, Swiss Alps. *Permafrost and Periglacial Processes*: in press.
21. GREENHALGH, S., WIESE, T., **MARESCOT, L.** 2010, Comparison of DC sensitivity patterns for anisotropic and isotropic media. *Journal of Applied Geophysics*, 70, 103-112.
20. GREENHALGH, S., **MARESCOT, L.**, ZHOU, B., GREENHALGH, M., WIESE, T., 2009, Electric potential and Fréchet derivatives for a uniform anisotropic medium with tilted axis of symmetry. *Pure and Applied Geophysics*, 166, 1-27.
19. GREENHALGH, S., ZHOU, B., GREENHALGH, M., **MARESCOT, L.**, WIESE, T., 2009, Explicit expression for the Fréchet derivatives in 3D anisotropic resistivity inversion. *Geophysics*, 74, F31-F34.
18. HILBICH, C., **MARESCOT, L.**, HAUCK, C., LOKE, M.H., MÄUSBACHER R., 2009, Applicability of Electrical Resistivity Tomography Monitoring to Coarse Blocky and Ice-rich Permafrost Landforms. *Permafrost and Periglacial Processes*, 20, 269–284.
17. WIESE, T., GREENHALGH, S., **MARESCOT, L.**, 2009, DC resistivity sensitivity patterns for tilted transversely isotropic media. *Near Surface Geophysics*, 123-137.
16. LINDERHOLM, P., **MARESCOT, L.**, LOKE, M.H., RENAUD, P., 2008. Cell-culture imaging using microimpedance tomography. *IEEE Trans. Biomedical. Engineering*, 55, 138-146.
15. **MARESCOT, L.**, PALMA LOPES, S., RIGOBERT, S, GREEN, A., 2008, Non-linear inversion of geoelectrical data acquired across 3D objects using a finite element method. *Geophysics*, 73, F 121- F 133.
14. **MARESCOT, L.**, MONNET, R., CHAPPELLIER, D., 2008, Resistivity and induced polarization surveys for slope instability studies in the Swiss Alps. *Engineering Geology*, 98, 18-28.

13. ZHE, J., GREENHALGH, S., **MARESCOT, L.**, 2007. Multi-channel, full waveform and flexible electrode combination resistivity imaging system. *Geophysics*, 72, F57-F64.
12. GREENHALGH, S., **MARESCOT, L.**, 2006. Modelling and migration of 2-D georadar data: a stationary phase approach. *IEEE Trans. Geoscience and Remote Sensing*, 44, 2421-2429. DOI: 10.1109/TGRS.2006.875363.
11. **MARESCOT, L.**, RIGOBERT, S., PALMA LOPES, S., LAGABRIELLE, R., CHAPPELLIER, D. 2006. A general approach for DC apparent resistivity evaluation on arbitrarily shaped 3D structures. *Journal of Applied Geophysics*, 60, 55-67. DOI: 10.1016/j.jappgeo.2005.12.003.
10. **MARESCOT, L.**, RIGOBERT, S., PALMA LOPES, S., PIAU, J.-M., LAGABRIELLE, R., CHAPPELLIER, D., 2005. Developments and use of CESAR-LCPC for direct and inverse modeling of electrical tomographies on 3D structures. *Bulletin des Laboratoires des Ponts et Chaussées*, 256-257, 53-65. ISSN: 1269-1496.
9. **MARESCOT, L.**, LIACI, S., CHAPPELLIER, D., 2003. Etude géoélectrique des cours d'eau interglaciaires à l'Ouest de la ville de Fribourg (Suisse). *Eclogae Geologicae Helvetiae*, 96, 261-273. ISSN: 0012-9402. DOI: 10.1007/s00015-003-1085-2.
8. **MARESCOT, L.**, LOKE, M.H., CHAPPELLIER, D., DELALOYE, R., LAMBIEL, C., REYNARD, E., 2003. Assessing reliability of 2D resistivity imaging in mountain permafrost studies using the Depth Of Investigation index method. *Near Surface Geophysics*, 1, 57-67. ISSN: 1569-4445.

Publications in Books and other Journals with Peer Review

7. PALMA LOPES, S., **MARESCOT, L.**, 2007. Tomographie de résistivité électrique de structures 3D de géométrie quelconque, in P. Argoul ed., Méthodes inverses en génie civil, Collection Études et recherches des LPC: in press.
6. **MARESCOT, L.**, 2006. Introduction à l'imagerie électrique du sous-sol. *Bulletin vaudois des Sciences Naturelles* 90, 23-40. ISSN: 0037-9603.
5. PALMA LOPES, S., **MARESCOT, L.**, RIGOBERT, S., 2006. Modélisation directe et inverse pour la tomographie de résistivité électrique sur des structures 3D, in O. Abraham ed., Champs physiques et propagation dans les sols et les structures du génie civil, Collection Études et recherches des LPC - série Sciences pour le génie civil - n° 11. ISSN 1167-4865.
4. **MARESCOT, L.**, MARTINEZ PAGAN, P., 2004. Ejemplos de aplicación del índice DOI (Depth Of Investigation) en tomografía eléctrica. *Ingeopres*, 132, 40-45. ISSN: 1136-4785.

3. DELALOYE, R., REYNARD, E., LAMBIEL, C., **MARESCOT, L.**, MONNET, R., 2003. Thermal anomaly and processes in a cold scree slope (Creux du Van, Switzerland), in M. Phillips, S. Springman, L. Arenson eds., Permafrost Volume 1, 175-180. ISBN: 90 5809 584 3. (Technical papers in this book were peer-reviewed as for an international journal)
2. **MARESCOT, L.**, 2003. Un algorithme d'inversion par moindres carrés pondérés: application aux données géophysiques par méthodes électromagnétiques en domaine fréquence. *Bulletin vaudois des Sciences Naturelles*, 88, 277-300. ISSN: 0037-9603.
1. REYNARD, E., LAMBIEL, C., DELALOYE, R., DEVAUD, G., BARON, L., CHAPPELLIER, D., **MARESCOT, L.**, MONNET, R., 2003. Glacier/permafrost relationships in recently deglaciated forefields of small alpine glaciers (Penninic Alps, Valais, Western Switzerland), in M. Phillips, S. Springman, L. Arenson eds., Permafrost Volume 2, 947-952. ISBN: 90 5809 585 1. (Technical papers in this book were peer-reviewed as for an international journal)

Publications in Proceeding Volumes

35. SCAPOZZA, C., LAMBIEL, C., BARON, L., **MARESCOT, L.**, REYNARD, E., 2010. Distribution and structure of permafrost in two alpine talus slopes, Valais, Swiss Alps. In *Thermal state of frozen ground in a changing climate during the IPY. Abstracts from the Third European Conference on Permafrost, Svalbard, Norway, 13-17 June 2010*.158
34. SCAPOZZA, C., LAMBIEL, C., REYNARD, E., BARON, L., **MARESCOT, L.**, 2009. Verification of Geophysical Models of the Permafrost Distribution within an Alpine Talus Slope Using Borehole Information, Valais, Swiss Alps. *Proceedings of the EGU General Assembly, Vienna, Austria, April 19-24, 2009*.
33. WIESE, T., GREENHALGH, S., ZHOU, B., **MARESCOT, L.**, GREENHALGH, M., DC resistivity Fréchet derivatives for a uniform anisotropic medium with tilted axis of symmetry. *Proceedings of the Australian Earth Sciences Convention 2009*.
32. LAMBIEL, C., SCAPOZZA, C., PIERACCI, K., BARON, L., **MARESCOT, L.** Thermal and electrical properties of a periglacial talus slope. *Proceedings of the Sixth Swiss Geoscience Meeting, Lugano, Switzerland, November 21-23, 2008*.
31. COSCIA, I., **MARESCOT, L.**, MAURER, H.R., GREENHALGH, S., LINDE, N., GREEN, A. Experimental Design for Crosshole Electrical Resistivity Tomography Data Sets. *Proceedings of the Near Surface 2008 - 14th European Meeting of Environmental and Engineering Geophysics, Kraków, Poland, September 15-17, 2008*.
30. CAMPBELL, F., KAISER, A., STRATFORD, W., HORSTMAYER, H., FINNEMORE, M., **MARESCOT, L.**, NOBES, D., GREEN, A., 2007. Investigating the structure of the Ostler Fault Zone, South Island, New Zealand, using high-resolution seismic reflection. *Proceedings of the 33rd International Geological Congress, Oslo, Norway, August 6-14, 2008*.

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29. **MARESCOT, L.**, LOKE, M.H., ABBET, D., DELALOYE, R., HAUCK, C., HILBICH, C., LAMBIEL, C., MORARD, S., REYNARD, E., 2008. Model appraisal and resolution analysis of geoelectric imaging results for frozen ground investigations. *Proceedings of the EGU General Assembly, Vienna, Austria, April 13-18, 2008. INVITED*
 28. DOETSCH, J., LINDE, N., COSCIA, I., **MARESCOT, L.**, ERNST, J., GREEN, A., DAFFLON, B., HOLLIGER, K. 2008. Three-dimensional hydrogeophysical zonation of a gravel aquifer in the vicinity of the Thur River, Switzerland, *CMWR 2008 - Computational Methods in Water Resources, July 6-10, 2008 in San Francisco.*
 27. CAMPBELL, F., KAISER, A., STRATFORD, W., HORSTMAYER, H., FINNEMORE, M., **MARESCOT, L.**, NOBES, D., GREEN, A., 2007. High Resolution Seismic Reflection Survey Across a Segmentation Transfer Zone in the Ostler Fault Zone, South Island, New Zealand. *Proceedings of the AGU General Assembly, San Francisco, USA, December 10-11, 2007.*
 26. DELALOYE, R., MORARD, S., DORTHE, J., **MARESCOT L.**, 2007. Time-lapse electrical resistivity measurements for investigating temperature changes in extrazonal ventilated permafrost. *Proceedings of the AGU General Assembly, San Francisco, USA, December 10-11, 2007.*
 25. **MARESCOT, L.**, LOKE, M.H., ABBET, D., DELALOYE, R., HAUCK, C., HILBICH, C., LAMBIEL, C., REYNARD, E., 2007. Assessing the reliability of geoelectric imaging results for permafrost investigations. *Proceedings of the AGU General Assembly, San Francisco, USA, December 10-11, 2007. INVITED*
 24. DENCHIK, N., **MARESCOT, L.**, CHAPPELLIER, D., 2006. 3D Resistivity monitoring - an effective electrode array to follow preferential flow during rainfalls. *Proceedings of the Near Surface 2006 - 12th European Meeting of Environmental and Engineering Geophysics, Helsinki, Finland, September 4-6, 2006.*
 23. HACINI, Y., **MARESCOT, L.**, CHAPPELLIER, D., 2006. Geophysical investigations for hydrogeological characterization at the Kappelen test site (Switzerland). *Proceedings of the Near Surface 2006 - 12th European Meeting of Environmental and Engineering Geophysics, Helsinki, Finland, September 4-6, 2006.*
 22. SCHMUTZ, M., PALMA-LOPES, S., SANCHEZ, I., CHAIZE J.-M., **MARESCOT, L.**, BURLOT, R., 2006. Etude de la zone non saturée - détection de cavités à partir de la surface. *Proceedings of the Journées Waterscan, Strasbourg, France, January 18-20, 2006.*
 21. ZHE, J., GREENHALGH, S., **MARESCOT, L.**, 2006. Multi-channel, full waveform and flexible electrode combination resistivity imaging system. *Proceedings of the Australian Earth Sciences Convention 2006, Melbourne, Australia, July 2-6, 2006.*
 20. ZHE, J., GREENHALGH, S., **MARESCOT, L.**, 2006. Resistivity imaging using flexible electrode combination data collected with a multi-channel, full waveform system. *Proceedings of the Near Surface 2006 - 12th European Meeting of Environmental and Engineering Geophysics, Helsinki, Finland, September 4-6, 2006.*
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19. DENCHIK, N., **MARESCOT, L.**, CHAPPELLIER, D., 2005. Choice of effective electrode array for 3D electrical resistivity monitoring during rainfalls. *Proceedings of the EGU General Assembly, Vienna, Austria, April 2-29, 2005.*
 18. HACINI, Y., **MARESCOT, L.**, CHAPPELLIER, D., 2005. Caractérisation hydrogéophysique d'un aquifère poreux complexe à l'aide des méthodes électriques et des diagraphies. Cas du site test de Kappelen. *Proceedings of the 5th Geofcan meeting, Orléans, France, September 20-21, 2005.*
 17. HACINI, Y., **MARESCOT, L.**, CHAPPELLIER, D., 2005. Constraints in hydrogeophysical 2D resistivity imaging. Case history: Kappelen test site. *Proceedings of the Near Surface 2005 - 11th European Meeting of Environmental and Engineering Geophysics, Palermo, Italy, September 4-7, 2005.*
 16. **MARESCOT, L.**, CHAPPELLIER, D., MONNET, R., 2005. Geophysical study of a slope instability in the Swiss Alps using resistivity and induced polarization methods. *Proceedings of the EGU General Assembly, Vienna, Austria, April 2-29, 2005.*
 15. **MARESCOT, L.**, PALMA LOPES, S., RIGOBERT, S., LAGABRIELLE, R., CHAPPELLIER, D., 2005. Non-linear resistivity inversion on 3D structures with complex shapes. *Proceedings of the Near Surface 2005 - 11th European Meeting of Environmental and Engineering Geophysics, Palermo, Italy, September 4-7, 2005.*
 14. **MARESCOT, L.**, PALMA LOPES, S., RIGOBERT, S., LAGABRIELLE, R., CHAPPELLIER, D., 2005. Non-linear resistivity inversion on three dimensional structures using the finite element method. *Proceedings of the EGU General Assembly, Vienna, Austria, April 2-29, 2005.*
 13. **MARESCOT, L.**, RIGOBERT, S., PALMA LOPES, S., LAGABRIELLE, R., CHAPPELLIER, D., 2005. DC apparent resistivity evaluation on 3D structures: a numerical geometric factor approach. *Proceedings of the Near Surface 2005 - 11th European Meeting of Environmental and Engineering Geophysics, Palermo, Italy, September 4-7, 2005.*
 12. SEILER, A., **MARESCOT, L.**, CHAPPELLIER, D., 2005. 3D resistivity imaging on a waste site. *Proceedings of the Near Surface 2005 - 11th European Meeting of Environmental and Engineering Geophysics, Palermo, Italy, September 4-7, 2005.*
 11. HACINI, Y., **MARESCOT, L.**, FLYNN, R., CHAPPELLIER, D., 2004. A fast calibration procedure to assess the reliability of heat-pulse flowmeter measurements. *Proceedings of the Near Surface 2004 - 10th European Meeting of Environmental and Engineering Geophysics, Utrecht, The Netherlands, September 6-9, 2004.*
 10. **MARESCOT, L.**, LOKE, M.H., 2004. Using the Depth Of Investigation method in 2D resistivity imaging for civil engineering surveys. *Proceedings of the SAGEEP meeting, Colorado Springs, USA, February 22-26, 2004.*
 9. **MARESCOT, L.**, PALMA LOPES, S., RIGOBERT, S., PIAU, J.M., HUMBERT, P., LAGABRIELLE, R., CHAPPELLIER, D., 2004. Forward and inverse resistivity modelling on complex three dimensional structures using the finite element method. *Proceedings of the SAGEEP meeting, Colorado Springs, USA, February 22-26, 2004.*

8. **MARESCOT, L., CHAPPELLIER, D., 2003.** 2D resistivity tomography applied to the study of Quaternary paleo-valleys. *Proceedings of the First Swiss Geoscience Meeting, Basel, Switzerland, November 28-29, 2003.*
7. **MARESCOT, L., CHAPPELLIER, D., 2003.** Resistivity surveying applied to hydrogeological characterisation of Quaternary paleo-valleys. *Proceedings of the 9th EEGS-ES meeting, Prague, Czech Republic, August 31-September 4, 2003.*
6. **MARESCOT, L., LOKE, M.H., 2003.** Application de l'indice DOI à l'imagerie électrique 2D pour les sous-sols à forts contrastes de résistivité. *Proceedings of the 4th Geofcan meeting, Paris, France, September 23-24, 2003.*
5. **MARESCOT, L., PALMA LOPES, S., RIGOBERT, S., LAGABRIELLE, R., CHAPPELLIER, D., 2003.** Utilisation du code d'éléments finis CESARL-LCPC pour la modélisation électrique directe. *Proceedings of the 4th Geofcan meeting, Paris, France, September 23-24, 2003.*
4. **MARESCOT, L., PALMA LOPES, S., RIGOBERT, S., LAGABRIELLE, R., CHAPPELLIER, D., 2003.** 3D resistivity finite element modelling using mesh-independent electrode location. *Proceedings of the 9th EEGS-ES meeting, Prague, Czech Republic, August 31-September 4, 2003.*
3. **MARESCOT, L., PALMA LOPES, S., RIGOBERT, S., PIAU, J.M., HUMBERT, P., LAGABRIELLE, R., CHAPPELLIER, D., 2003.** Utilisation du code d'éléments finis CESARL-LCPC pour la modélisation de données électrique 3D. *Proceedings of the 3^{èmes} Journées des Sciences l'Ingénieur, Dourdan, France, Decembre 9-11, 2003.*
2. **MARESCOT, L., PALMA LOPES, S., LAGABRIELLE, R., CHAPPELLIER, D., 2002.** Designing surface-to-borehole resistivity tomography surveys using the Fréchet derivative. *Proceedings of the 8th EEGS-ES meeting, Aveiro, Portugal, September, 8-12, 2002.*
1. **MARESCOT, L., MONNET, R., BARON, L., LAMBIEL, C., REYNARD, E., DELALOYE, R., CHAPPELLIER, D., 2001.** 2D electrical resistivity imaging in mountain permafrost studies: three challenging surveys in the Swiss Alps and Jura Mountains. *Proceedings of the 7th EEGS-ES meeting, Birmingham, England, September, 2-6, 2001.*

Seminars

- 2010:** Introduction to Inversion in Geophysics. Université de Fribourg, 19/4/2010.
- 2006:** Electrical tomography in hydrology. Institut de Physique du Globe de Strasbourg, France, 9/3/2006.
- 2006:** Electrical resistivity techniques applied to non-destructive and material testing: some outlooks. Institute of Geophysics, ETHZ, 22/2/2006.
- 2005:** Introduction à la tomographie électrique appliquée à la prospection archéologique. Université de Fribourg, 8/3/2005.

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- 2005:** Modélisation directe et inverse par éléments finis en prospection géoélectrique non-conventionnelle: application au contrôle non-destructif et au risque en génie civil. Département de Géophysique Appliquée, Université Pierre et Marie Curie, Paris, 2/2/2005.
- 2005:** Modélisation directe et inverse par éléments finis en prospection géoélectrique non-conventionnelle: application au contrôle non-destructif et au risque en génie civil. Laboratoire Central des Ponts et Chaussées, Nantes, 3/2/2005.
- 2004:** Modélisation par éléments finis en prospection géoélectrique non-conventionnelle : application au contrôle non-destructif et au risque en génie civil. Institut de Géophysique, Université de Lausanne, 7/12/2004.
- 2004:** Modélisation électrique directe et inverse sur des structures 3D complexes par la méthodes des éléments finis. Institut de Géophysique, Université de Lausanne, 20/1/2004.
- 2003:** Modélisation 3D de surface et de forage à l'aide des méthodes de résistivité en utilisant le code d'éléments finis CESAR-LCPC. Laboratoire Central des Ponts et Chaussées, Nantes, 28/5/2003.
- 2003:** Développement du code d'éléments finis CESAR-LCPC pour la modélisation et l'inversion géophysique (problèmes électriques et thermiques). Institut de Géophysique, Université de Lausanne, 28/1/2003.
- 2002:** Imagerie électrique en géosciences: quelle fiabilité accorder aux modèles obtenus? Journée lémanique, Lausanne, Suisse, 25/11/2002.
- 2002:** Introduction au problème inverse en tomographie électrique et sismique. Institut de Géophysique, Université de Lausanne, 22/1/2002.
- 2001:** Les tremblements de terre : lorsque la Terre bouge en Suisse et dans le monde. Talk on earthquake and seismic hazards in Switzerland and in the world. Home Médicalisé de la Sarine, 2/5/2001.

University Related Publications

1. **MARESCOT, L.**, 2004. *Modélisation directe et inverse en prospection électrique sur des structures 3D complexes par la méthode des éléments finis. (Title translated from French: Forward and inverse resistivity modelling on complex three dimensional structures using the finite element method)*. PhD thesis, University of Nantes and University of Lausanne, 208p.
2. **MARESCOT, L.**, 2000. *La Molasse de la région de la Sense (Cantons de Bern et Fribourg). Tectonique du contact Molasse du Plateau et Molasse Subalpine, paléontologie de l'USM, pétrographie des conglomérats de l'OMM (Couches du Belpberg)*. Diplôme de Géologue (Master Thesis, Part 2, University of Lausanne), 92p.
3. **MARESCOT, L.**, LIACI, S., 1999. *Etude géoélectrique en milieu Quaternaire complexe: Paléogéographie des anciens cours d'eau sur le tracé du SWISSMETRO dans la région de Matran (canton de Fribourg, Suisse)*, Diplôme de Géologue (Master Thesis, Part 1, University of Lausanne), 97p.

Significant Contributions without Peer Review (Selection)

1. Course in Environmental and Engineering Geophysics (Bachelor level, 2005-2007) at ETHZ, Swiss Federal Institute of Technology, Zurich. Topics covered are gravity, magnetic, electrical (resistivity, induced polarization, spontaneous potential), electromagnetic surveying. Slides and exercises are available online: **www.tomoquest.com**
2. **MARESCOT, L.**, 2007-2011. *Géophysique appliquée à l'archéologie*. Course notes, 82p. Available online: **www.tomoquest.com**
3. **MARESCOT, L.**, 2006-2007. *Introduction to environmental and engineering geophysics*. Course notes, 29p. Available online: **www.tomoquest.com**
4. **MARESCOT, L.**, 2001-2005. *Imagerie électrique pour géologues. Acquisition, traitement, interprétation*. Course notes, 75p. Available online: **www.tomoquest.com**
5. CHAPPELLIER, D., MARI, J.-L., TACCHINI, G., BARON, L., MONNET, R., **MARESCOT, L.**, ROCHAT, S., FURRER, J., PERRET, F. Online Course in Geophysics <http://www-ig.unil.ch/cours>, Institute of Geophysics (University of Lausanne) and Institut Français du Pétrole (IFP).