

Refereed publications – Martyn Unsworth

Updated July 2025

- (148) **Cordell DR**, Mann IR, Dimitrakoudis S, Parry H, Unsworth MJ, Long-Term Peak Geoelectric Field Behavior for Space Weather Hazard Assessment in Alberta, Canada Using Geomagnetic and Magnetotelluric Measurements, *Space Weather*, 23, e2024SW004305, <https://doi.org/10.1029/2024SW004305>, 2025 (accepted 3 March 2025)
- (147) **Cordell DR**, Unsworth MJ, The influence of the geoelectric coast effect on geomagnetically induced currents, TPWRD-00697-2024, *IEEE Transactions on Power Delivery*, 40(3), 1379 – 1389, <https://doi.org/10.1109/TPWRD.2025.3544488>, 2025. (accepted 17 February, 2025)
- (146) Garcia B, Guevara-Pillaca CJ, Unsworth MJ, Pereyra P, Benavente C, Combey A, Palacios D, Palomino A, Vilcapoma L, Aguirre E, Ponce R, Rosell L, Munoz A, Locating Active Faults in the Cusco valley using Magnetotelluric and Radon Gas Data, *Tectonophysics*, 898, 230639, <https://doi.org/10.1016/j.tecto.2025.230639>, 2025. (accepted 23 January 2025).
- (145) **Hanneson CS**, Unsworth MJ, Currie CA, Lithospheric thickness and the backarc–craton lithosphere step in southwestern Canada imaged by a 3D magnetotelluric study, *Canadian Journal of Earth Sciences*, 62, 843-864, <https://doi.org/10.1139/cjes-2024-0140>, 2025. (accepted 6 January, 2025)
- (144) **Killingbeck SF**, Unsworth MJ, Young DA, Rutishauser A, Yan S, Beem LH, Richter TG, Blankenship DD, Dubnick A, Criscitiello AS, Vestrum Z, Greenbaum J, Dow CF, Integrating gravity, magnetic and magnetotelluric data over Devon Ice Cap, Canadian Arctic, to investigate the subglacial geology, *Journal of Geophysical Research : Solid Earth*, 130, e2024JB028929, <https://doi.org/10.1029/2024JB028929>, 2025. (accepted December 31 2024)
- (143) **Chase BFW** and Unsworth MJ, Magnetotelluric evidence for the formation of the layered Sask Craton by flat slab subduction, *Earth and Planetary Science Letters*, 647, 119027, <https://doi.org/10.1016/j.epsl.2024.119027>, 2024 (accepted September 23 2024)
- (142) **Parry H**, Mann IR, Kale A, Milling DK, Clark C, Cui R, MacMullin R, **Cordell DR**, Unsworth MJ, Using a Differential Magnetometer Measurement to Infer Geomagnetically Induced Currents: An Augmented Approach, *Space Weather*, 22, 2024SW003894, <https://doi.org/10.1029/2024SW003894>, 2024 (accepted July 8 2024).
- (141) **Killingbeck SF**, Rutishauser A, Unsworth MJ, Dubnick A, Criscitiello AS, Killingbeck J, Dow CF, Hill T, Booth AD, Main B, Brossier E, Misidentified subglacial lake beneath the Devon Ice Cap, Canadian Arctic: A new interpretation from seismic and electromagnetic data, *The Cryosphere*, <https://doi.org/10.5194/tc-18-3699-2024>, 2024. (accepted July 3, 2024).

- (140) Huang K, Dehghani-Sanij A, Hickson C, Grasby SE, Smekjal E, Miranda M, Raymond J, Fraser D, Harbottle K, Alonso-Torres D, Ebell J, Dixon J, Olsen E, Vany J, Marcia K, Colpron M, Wigston A, Brasnett G, Unsworth MJ, Harms P, Canada's Geothermal Energy Update in 2023, *Energies*, 17(8), 1807, <https://doi.org/10.3390/en17081807>, 2024. (accepted April 1 2024).
- (139) **Lee BM**, Unsworth MJ, **Finley T**, **Kong W**, **Cordell DR**, Electrically anisotropic structure of the Rocky Mountain Trench near Valemount, British Columbia: Implications for geothermal exploration, *Canadian Journal of Earth Sciences*, 61(6), 730-749, <https://doi.org/10.1139/cjes-2023-0086>, 2024. (accepted March 21 2024)
- (138) **Cordell DR**, Mann IR, Parry H, Unsworth MJ, Clark C, Cui R, Keleman E, Comparison of modelled geomagnetically induced currents in the Alberta power grid with Hall probe measurements during a geomagnetic storm, *Space Weather*, 22, e2023SW003813 <https://doi.org/10.1029/2023SW003813>, 2024. (accepted March 5, 2024)
- (137) **Chase BFW**, Unsworth MJ, Atekwana E, Evans RL, Zhu J, Magnetotelluric Imaging of the Lithospheric Structure of the Southern Oklahoma Aulacogen: Evidence for Long-Term Weakening Caused by Rifting, *Journal of Geophysical Research : Solid Earth*, <https://doi.org/10.1029/2023JB026555>, 2023. (accepted June 7 2023).
- (136) **Hanneson CS**, Unsworth MJ, Magnetotelluric imaging of the magmatic and geothermal systems beneath Mount Meager, southwestern Canada, *Canadian Journal of Earth Sciences*, 60(10), 1385-1403, <https://doi.org/10.1139/cjes-2022-0136>, 2023. (accepted May 11 2023).
- (135) **Hanneson CS**, Unsworth MJ, Regional-scale resistivity structure of the middle and lower crust and uppermost mantle beneath the southeastern Canadian Cordillera and insights into its causes, *Geophysical Journal International*, 234(3), 2032-2052, <https://doi.org/10.1093/gji/ggad183>, 2023. (accepted April 22, 2023)
- (134) Unsworth MJ, **Comeau MJ**, Diaz D, Brasse H, Heit B, Favetto A, Pomposiolo C, Barcelona H, Peri G, Ticona F, Crustal structure of the Lazufre volcanic complex and the Southern Puna from 3-D inversion of magnetotelluric data: implications for surface uplift and evidence for melt storage and hydrothermal fluids, *Geosphere*, 19(5), 1210-1230, <https://doi.org/10.1130/GES02506.1>, 2023. (accepted April 18, 2023)
- (133) **Bettac S**, Unsworth MJ, Pearson GD, Craven JA, New constraints on the structure and composition of the lithospheric mantle beneath the Slave Craton, Northwest Canada from 3-D magnetotelluric data – origin of the Central Slave Mantle Conductor and possible evidence for lithospheric scale fluid flow, *Tectonophysics*, 851, 229760, <https://doi.org/10.1016/j.tecto.2023.229760>, 2023. (accepted January 31 2023).
- (132) **Yu TC**, Currie CA, Unsworth MJ, Chase BFW, The structure and dynamics of the uppermost mantle of southwestern Canada from a joint analysis of geophysical observations, *Journal of Geophysical Research: Solid Earth*, 127(10), <https://doi.org/10.1029/2022JB024130>, 2022. (accepted September 23 2022).
- (131) **Finley TD**, Johnston ST, Unsworth MJ, Banks J, Pana D, Modern dextral strain controls active hydrothermal systems in the southeastern Canadian Cordillera, *GSA Bulletin*, 135 (7-8), 2015-2037, <https://doi.org/10.1130/B36500.1>, 2023. (accepted August 25 2022)

- (130) Hill GJ, Wannamaker PE, Maris V, Stodt JA, Kordy M, Unsworth MJ, Bedrosian PA, Wallin EL, Uhlmann DF, Ogawa Y, Kyle P, Trans-crustal structural control of CO₂-rich extensional magmatic systems revealed at Mount Erebus, Antarctica, *Nature Communications*, NCOMMS-21-50149B, 13, 4062, <https://doi.org/10.1038/s41467-022-31694-6>, 2022. (accepted May 4 2022).
- (129) **Jiang F**, Chen X, Unsworth MJ, Cai J, Han B, Wang L, Dong Z, Cui T, Zhan Y, Zhao G, Tang J, Mechanism for the uplift of Gongga Shan in the southeastern Tibetan Plateau constrained by 3D Magnetotelluric data, *Geophysical Research Letters*, 49(9), <https://doi.org/doi.org/10.1029/2021GL097394>, 2022. (accepted April 13 2022).
- (128) **Wang E**, Unsworth MJ, Three-dimensional crustal and upper mantle resistivity structure of Alberta, Canada: implications for Precambrian tectonics, *Geophysical Journal International*, 230(3), 1679-1698, <https://doi.org/10.1093/gji/ggac128>, 2022. (accepted March 24 2022).
- (127) **Ye G**, Xia Z, Unsworth MJ, Wei W, Jin S, Liu Z, Ongoing Asthenospheric Upwelling and delamination-style down-welling beneath Northeast China: Evidence from High-Resolution Magnetotelluric Profiles, *Journal of Geophysical Research : Solid Earth*, 127(3), <https://doi.org/10.1029/2021JB022100>, 2022. (accepted January 8 2022)
- (126) **Cordell DR**, Unsworth MJ, **Lee BM**, **Hanneson CS**, Milling DK, Mann IR, Estimating the geoelectric field and electric power transmission line voltage during a geomagnetic storm in Alberta, Canada using measured magnetotelluric impedance data: The influence of three-dimensional electrical structures in the lithosphere, *Space Weather*, 19(10), <https://doi.org/10.1029/2021SW002803>, 2021. (accepted 28 September 2021).
- (125) **Kong W**, Tan H, Lin C, Unsworth MJ, **Lee BM**, Peng M, Wang M, Tong T, Three-dimensional inversion of magnetotelluric data for a resistivity model with arbitrary anisotropy, 2020JB020562, *Journal of Geophysical Research: Solid Earth*, 126(8), <https://doi.org/10.1029/2020JB020562>, 2021. (accepted August 4 2021).
- (124) **Killingbeck SF**, Dow CF, Unsworth MJ, A quantitative method for deriving salinity of subglacial water using ground-based transient electromagnetics, *Journal of Glaciology*, 68(268), <https://doi.org/10.1017/jog.2021.94>, 2021. (accepted July 22 2021).
- (123) **Cordell DR**, Unsworth MJ, Lee BM, Diaz D, Bennington NL, Thurber CH, Integrating magnetotelluric and seismic images of silicic magma systems: A case study from the Laguna del Maule Volcanic Field, central Chile, 2020JB020459, *Journal of Geophysical Research : Solid Earth*, 125(11), <https://doi.org/10.1029/2020JB020459>, 2020 (accepted November 2 2020).
- (122) Yu N, Unsworth MJ, Wang X, Li D, Wang E, Li R, Hu Y, Cai X, New insights into crustal and mantle flow beneath the Red River Fault zone and adjacent areas on the Southern margin of the Tibetan Plateau revealed by a 3-D magnetotelluric study, *Journal of Geophysical Research : Solid Earth*, 125(10), <https://doi.org/10.1029/2020JB019396>, 2020 (accepted September 11 2020).
- (121) Calvert AJ, Bostock MG, Savard G, Unsworth MJ, Low frequency earthquakes at the base of an over-pressured subduction shear zone, *Nature Communications*, 11:3874, <https://doi.org/10.1038/s41467-020-17609-3>, 2020 (accepted July 8 2020)

- (120) Zhu T, Zhan Y, Unsworth MJ, Zhao G, Sun X, High-resolution lithosphere viscosity structure and the dynamics of the 2008 Wenchuan earthquake area: new constraints from magnetotelluric imaging, *Geophysical Journal International*, 222(2), 1352-1362, <https://doi.org/10.1093/gji/ggaa214>, 2020 (accepted April 28 2020)
- (119) **Sun X**, Zhan Y, Unsworth MJ, Egbert GD, Zhang H, Chen X, Zhao G, Sun J, Zhao L, Cui T, Liu Z, Han J, 3-D Magnetotelluric imaging of the easternmost Kunlun fault: insights into strain partitioning and the seismotectonics of the Jiuzhaigou Ms7.0 earthquake, *Journal of Geophysical Research : Solid Earth*, 125(5), <https://doi.org/10.1029/2020JB019731>, 2020 (accepted April 17 2020).
- (118) **Lee BM**, Unsworth MJ, Arnason K, **Cordell DR**, Imaging the magmatic system beneath the Krafla geothermal field, Iceland: A new 3-D electrical resistivity model from inversion of magnetotelluric data, *Geophysical Journal International*, 220(1), 541-567, <https://doi.org/10.1093/gji/ggz427>, 2020 (accepted October 2, 2019).
- (117) **Cordell DR**, MJ Unsworth, D Diaz, V Reyes-Wagner, CA Currie, SP Hicks, Fluid and melt pathways in the central Chilean subduction zone near the 2010 Maule earthquake (35° -36° S) as inferred from magnetotelluric data, *Geochemistry, Geophysics, Geosystems*, 20, <https://doi.org/10.1029/2018GC008167>, 2019 (accepted April 1 2019).
- (116) Wespestad CE, CH Thurber, NL Andersen, BS Singer, C Cardona, X Zeng, NL Bennington, K Keranen, DE Peterson, **DR Cordell**, MJ Unsworth, C Miller, G Williams-Jones, Magma reservoir below Laguna del Maule Volcanic Field, Chile imaged with surface-wave tomography, *Journal of Geophysical Research : Solid Earth*, 124(3), 2858-2872, <https://doi.org/10.1029/2018JB016485>, 2019 (accepted February 19 2019)
- (115) Ye G, MJ Unsworth, W Wei, S Jin, Z Liu, The Lithospheric Structure of the Solonker Suture Zone and Adjacent Areas: Crustal Anisotropy Revealed by a High-Resolution Magnetotelluric Study, *Journal of Geophysical Research: Solid Earth*, 124(2), 1142–1163, <https://doi.org/10.1029/2018JB015719>, 2019 (accepted November 27 2018)
- (114) **Xu S**, MJ Unsworth, X Hu, WD Mooney, Magnetotelluric Evidence for Asymmetric Simple Shear Extension and Lithospheric Thinning in South China, *Journal of Geophysical Research : Solid Earth*, 124(1), 104-124, <https://doi.org/10.1029/2018JB016505>, 2019 (accepted January 2 2019)
- (113) Chen J, F Gaillard, A Villaros, X Yang, M Laumonier, L Jolivet, MJ Unsworth, L Hashim, B Scaillet, G Richard, Melting conditions in the modern Tibetan crust since the Miocene, *Nature Communications*, 9, article number 3515, <https://doi.org/10.1038/s41467-018-05934-7>, 2018 (accepted July 30 2018)
- (112) ME Pritchard, SL de Silva, G Michelfelder, G Zandt, SR McNutt, J Gottsmann, ME West, J Blundy, DH Christensen, NJ Finnegan, E Minaya, RSJ Sparks, M Sunagua, MJ Unsworth, C Alvizuri, MJ Comeau, R del Potro, M Diez, A Farrell, ST Henderson, JA Jay, T Lopez, D Legrand, JA Naranjo, H McFarlin, D Muir, JP Perkins, Z Spica, A Wilder, KM Ward, Synthesis: PLUTONS: Investigating the Relationship Between Pluton Growth and Volcanism in the central Andes, *Geosphere*, 14(3), <https://doi.org/10.1130/GES01578.1>, 2018 (accepted February 21, 2018).

- (111) **Cordell DR**, MJ Unsworth, D Diaz, Imaging the Laguna del Maule Volcanic Field, central Chile using magnetotellurics: Evidence for crustal melt regions laterally-offset from surface vents and lava flows, *Earth and Planetary Science Letters*, 488, 168-180, <https://doi.org/10.1016/j.epsl.2018.01.007>, 2018 (accepted January 9 2018)
- (110) **Wang E**, MJ Unsworth, T Chacko, Geoelectric structure of the Great Slave Lake shear zone in northwest Alberta: implications for tectonic history and geothermal exploration, *Canadian Journal of Earth Sciences*, 55, 295-307, <https://doi.org/10.1139/cjes-2017-0067>, 2018 (accepted October 5 2017)
- (109) **Miles DM**, I Mann, A Kale, DK Milling, B Narod, J Bennest, D Barona, MJ Unsworth, The effect of winding and core support material on the thermal gain dependence of a fluxgate magnetometer sensor, *Geoscientific Instrumentation Methods and Data Systems*, 6, 377-396, <https://doi.org/10.5194/gi-6-377-2017>, 2017 (accepted October 8 2017)
- (108) **Reyes-Wagner V**, D Diaz, D Cordell, MJ Unsworth, Regional electrical structure of the Andean subduction zone in central Chile (35°-36°S) using magnetotellurics, *Earth, Planets and Space*, 69:142, <https://doi.org/10.1186/s40623-017-0726-z>, 2017 (accepted 29 September 2017)
- (107) **Lee BM**, MJ Unsworth, J Hubert, JP Richards, 3-D joint ZTEM and magnetotelluric inversion : A case study from the Morrison porphyry-Cu deposit, British Columbia, *Geophysical Prospecting*, 66(2), 397-421, <https://doi.org/10.1111/1365-2478.12554>, 2018 (accepted July 7 2017)
- (106) **Laumonier M**, F Gaillard, D Muir, J Blundy and MJ Unsworth, Giant magmatic reservoirs at mid-crustal depth inferred from electrical conductivity and the growth of the continental crust, *Earth and Planetary Science Letters*, 457, 173-180, <https://doi.org/10.1016/j.epsl.2016.10.023>, 2017 (accepted 12 October 2016).
- (105) **Mohamadian M**, A Netaji, MJ Unsworth, A Majidi, Interpretation of MT data from the Gachsaran oil field using sharp boundary inversion, *Journal of Petroleum Science and Engineering*, 149, 25-39, <https://doi.org/10.1016/j.petrol.2016.10.019>, 2017 (accepted 10 October 2016)
- (104) van Neste CW, R Hull, JE Hawk, A Phani, MJ Unsworth, T Thundat, Electrical Excitation of the Local Earth for Resonant, Wireless Energy Transfer, *Wireless Power Transfer*, 3(2), <https://doi.org/10.1017/wpt.2016.8>, 2016 (accepted 6 September 2016)
- (103) **Comeau MJ**, MJ Unsworth, D Cordell, New constraints on magma distribution beneath Volcan Uturuncu, Bolivia, from magnetotelluric data, *Geosphere*, 12(5), 1391-1421, <https://doi.org/10.1130/GES01277.1>, 2016. (accepted July 13 2016)
- (102) **Liddell MV**, MJ Unsworth, J Pek, Magnetotelluric imaging of anisotropic crust near Fort McMurray, Alberta: implications for engineered geothermal system development, *Geophysical Journal International*, 205(3), 1365-1381, <https://doi.org/10.1093/gji/ggw089>, 2016. (accepted 5 March, 2016).
- (101) Espinosa-Cardena JM, JO Campos-Enriquez, VM Ramon-Marquez, MJ Unsworth, Heat flow pattern at Chicxulub Impact Crater, Northern Yucatan, Mexico, *Journal of Volcanology and Geothermal Research*, 311, 135-149, January 2016

- (100) **Hubert J, BM Lee, L Liu**, MJ Unsworth, JP Richards, B Abbassi, LZ Chen, DW Oldenburg, J Legault, M Rebagliati, Three-dimensional imaging of a Ag-Au-rich epithermal system in British Columbia, Canada using airborne ZTEM and ground-based magnetotelluric data, *Geophysics*, 81(1), B1-B12, [10.1190/GEO2015-0230.1](https://doi.org/10.1190/GEO2015-0230.1), January 2016.
- (99) Le Pape F, AG Jones, MJ Unsworth, J Vozar, W Wei, S Jin, G Ye, J Jing, H Dong, L Zhang, C Xie, Constraints of the evolution of crustal flow in Northern Tibet, *Geochemistry, Geophysics, Geosystems*, 16, [doi:10.1002/2015GC005828](https://doi.org/10.1002/2015GC005828), November 5, 2015.
- (98) **Turkoglu E**, MJ Unsworth, F Bulut and I Caglar, Crustal structure of the North Anatolian and East Anatolian Fault Systems from magnetotelluric studies, *Physics of the Earth and Planetary Interiors*, 241, 1-14, April 2015.
- (97) **Zhang L**, MJ Unsworth, S Jin, W Wei, G Ye, AG Jones, J Jing, H Dong, C Xie, F Le Pape, J Vozar, Structure of the Central Altyn Tagh Fault revealed by magnetotelluric data : New insights into the continent-continent collision on the Northern Margin of the Tibetan Plateau, *Earth and Planetary Science Letters*, 415, 67-79, April 2015
- (96) **Dong Z**, T Ji, MJ Unsworth, X Chen, Electrical resistivity structure of Northeastern China : Implications for the mechanism of craton destruction, *Journal of Asian Earth Sciences*, 100, 115-131, March 2015.
- (95) **Comeau M**, MJ Unsworth, F Ticona, M Sunagua, Magnetotelluric images of magma distribution beneath Volcan Uturuncu, Bolivia : Implications for magma dynamics, *Geology*, 43(3), 243-246, March 2015.
- (94) **Zhang L**, G Ye, S Jin, W Wei, MJ Unsworth, AG Jones, J Jing, H Dong, C Xie, F Le Pape, J Vozar, Lithospheric Electrical Structure across the Eastern Segment of the Altyn Tagh Fault on the Northern Margin of the Tibetan Plateau, *Acta Geologica Sinica*, 89(1), 90-104, February 2015.
- (93) Singer BS, NL Andersen, H Le Mevel, KL Feigl, CR DeMets, B Tikoff, BR Jicha, C Cardona, M Loreto, F Gil, MJ Unsworth, G Williams-Jones, J Fierstein, W Hildreth, J Vasquez, Dynamics of a large, restless rhyolitic magma system at Laguna del Maule, southern Andes, Chile, *GSA Today*, 24(12), 4-10, December 2014.
- (92) Wannamaker PE, RL Evans, PA Bedrosian, MJ Unsworth, V Maris RS McGary, Segmentation of Plate Coupling, Fate of Subduction fluids and modes of arc magmatism in Cascadia, inferred from magnetotelluric resistivity, *Geochemistry, Geophysics Geosystems*, 15, 4230–4253, [doi:10.1002/2014GC005509](https://doi.org/10.1002/2014GC005509), November 2014.
- (91) Wei W, F Le Pape, AG Jones, J Vozar, H Dong, MJ Unsworth, S Jin, G Ye, J Jing, L Zhang, C Xie, Northward Channel flow in Northern Tibet revealed from 3D magnetotelluric modelling, *Physics of the Earth and Planetary Interiors*, 235, 13-24, October 2014.

- (90) **Yin Y**, MJ Unsworth, **MV Liddell**, D Pana, JA Craven, Electrical resistivity structure of the Great Slave Lake shear zone, northwest Canada : implications for tectonic history, *Geophysical Journal International*, 199, 178-199, October 2014.
- (89) **Pathak V**, T Babadagli, JA Majorowicz, MJ Unsworth, Evaluation of engineered geothermal systems as heat source for oilsands production in Northern Alberta, *Natural Resources Research*, doi: 10.1007/s11053-013-9218-4, 23(2), 247-265, June 2014
- (88) **Majorowicz JA**, J Chan, J Crowell, W Gosnold, L Heaman, J Kueck, G Nieuwenhuis, DR Schmitt, N Walsh, MJ Unsworth, The first deep heat flow determination in crystalline basement rocks beneath the Western Canadian Sedimentary Basin, *Geophysical Journal International*, doi: 10.1093/gji/ggu065, 197, 731-747, May 2014
- (87) **Nieuwenhuis G**, MJ Unsworth, D Pana and JA Craven, **EA Bertrand**, Three-dimensional resistivity structure of Southern Alberta : Implications for Pre-Cambrian tectonics, *Geophysical Journal International*, doi: 10.1093/gji/ggu068, 197, 838-859, May 2014.
- (86) **Hofmann H**, S Weides, T Babadagli, G Zimmermann, I Moeck, JA Majorowicz, MJ Unsworth, Potential for enhanced geothermal systems in Alberta, Canada, *Energy*, 578-591, 69, April 2014
- (85) Jones AG, J Ledo, IJ Ferguson, JA Craven, MJ Unsworth, M Chouteau, JE Spratt, The electrical resistivity of Canada's lithosphere and correlation with other parameters : contributions from Lithoprobe and other programmes, *Canadian Journal of Earth Sciences*, 51(6), 573-617, March 2014
- (84) **Azeez KK**, MJ Unsworth, PK Patro, T Harinarayana, RS Sastry, Resistivity structure of the Central Indian Tectonic Zone (CITZ) from multiple magnetotelluric (MT) profiles and tectonic implications, *Pure and Applied Geophysics*, doi 10.1007/s00024-013-0649-y, 170(12), 2231-2256, December 2013
- (83) **Zhan Y**, G Zhao, MJ Unsworth, L Wang, X Chen, T Li, Q Xiao, J Wang, J Tang, J Cai, Y Wang, Deep structure beneath the southwestern section of the Longmenshan fault zone and seismogenetic context of the 4.20 Lushan Ms 7.0 earthquake, *Chinese Science Bulletin*, 58, doi: 10.1007/s11434-013-6013-x, 58 (28-29), 3467-3474, October 2013
- (82) **Rippe D**, MJ Unsworth and CA Currie, Magnetotelluric constraints on the fluid content of the upper mantle beneath the southern Canadian Cordillera: implications for rheology, *Journal of Geophysical Research*, 118(10), doi:10.1002/jgrb.50255, October 2013
- (81) Campos-Enriquez JO, F Corbo-Camargo, J Arzate-Flores, JD Keppie, C Arango Galván, MJ Unsworth, SI Belmonte Jiménez, The buried southern continuation of the Oaxaca-Juarez terrane boundary and Oaxaca Fault, southern Mexico: magnetotelluric constraints, *Journal of South American Earth Sciences*, 43, 62-73, doi 10.1016/j.jsames.2013.01.001, April 2013

- (80) **Avşar Ü, E Türkoğlu**, MJ Unsworth, İ Çağlar, B Kaypak, Geophysical images of the North Anatolian Fault in the Erzincan Basin, Eastern Turkey and their tectonic implications, *Pure and Applied Geophysics*, 409-431, 170(3), doi 10.1007/s00024-012-0521-5, March 2013
- (79) Unsworth MJ, S Rondenay, Mapping the distribution of fluids in the crust and lithospheric mantle utilizing geophysical methods, Chapter 13 in *Metasomatism and Metamorphism: The Role of Fluids in Crustal and Upper Mantle Processes*, 535-598, edited by DE Harlov and H Austrheim, Springer-Verlag Berlin Heidelberg, Lectures in Earth Sciences, doi 10.1007/978-3-642-28394-9_13, January 2013
- (78) Zhao G, MJ Unsworth, **Y Zhan**, L Wang, X Chen, AG Jones, J Tang, Q Xiao, J Wang, J Cai, T Li , Y Wang, J Zhang, Crustal structure and rheology of the Longmenshan and Wenchuan Mw=7.9 earthquake epicentral area from magnetotelluric data, *Geology*, 40(12), 1139-1142, December 2012
- (77) **Gray DA**, JA Majorowicz, MJ Unsworth, Investigation of the geothermal state of sedimentary basins using oil industry thermal data : Case study from Northern Alberta exhibiting the need to systematically remove biased data, *Journal of Geophysics and Engineering*, 9(5), 534-548, doi:10.1088/1742-2132/9/5/534, August 2012
- (76) **Bertrand EA**, MJ Unsworth , CW Chiang , CS Chen , CC Chen , FT Wu, **E Turkoglu**, HL Hsu , G Hill, Magnetotelluric imaging beneath the Taiwan orogen: An arc-continent collision, *Journal of Geophysical Research*, 117, B01402, doi:10.1029/2011JB008688, January 2012
- (75) Majorowicz JA, MJ Unsworth, T Chacko, **A Gray**, L Heaman, D Potter, DR Schmitt and T Babadagli, Geothermal energy as a source of heat for oilsands processing in northern Alberta, Canada, Chapter 27, in: Heavy Oil and Oilsand Petroleum Systems in Alberta and beyond, co-edited by FJ Hein, D Leckie, J Suter and S Larter, *AAPG Studies in Geology* 64, doi:10.1306/13371602St643569, January 2012
- (74) Jamieson RA, MJ Unsworth, NBW Harris, C Rosenberg, K Schulmann, Crustal melting and the flow of mountains, *Elements*, 7(4), 253-260, DOI: 10.2113/gselements.7.4.253, August 2011
- (73) Chen CS, MJ Unsworth, Chiang CW, **EA Bertrand**, FT Wu, Subducted and Exhumed Crust beneath Taiwan Imaged by Magnetotelluric Data, in New Frontiers in Tectonic Research - General Problems, Sedimentary Basins and Island Arcs, Editor E V Sharkov, ISBN 978-953-307-1434-1, *Intech Open Access Publisher*, January 2011
- (72) **Chiang CW**, CC Chen, MJ Unsworth, **EA Bertrand**, CS Chen, HL Shu, Deep electrical structure of southern Taiwan and its tectonic implications, 21(6), 879-895, doi: 10.3319/TAO.2010.02.25.01(T), *Terrestrial Atmospheric and Ocean Sciences*, December 2010
- (71) **Rippe D** and MJ Unsworth, Quantifying crustal flow in Tibet with magnetotelluric data, *Physics of the Earth and Planetary Interiors*, 179, 107-121, doi:10.1016/j.pepi.2010.01.009, April 2010.

- (70) Bai D, MJ Unsworth, M Meju, X Ma , J Teng, X Kong , Y Sun, J Sun, L Wang, C. Jiang, C. Zhao, P. Xiao, M. Liu, Crustal deformation of the Eastern Tibetan Plateau revealed by magnetotelluric imaging, 3(5), 358-362, doi:10.1038/ngeo830, *Nature Geoscience*, April 2010
- (69) Ansari SM, B Oskooi and MJ Unsworth, 1-D and 2-D interpretation of the magnetotelluric data for detecting geological subsurface structures along an east-west profile in Arak, *Journal of Earth and Space Physics*, 36(3), 1-13, March 2010
- (68) Unsworth MJ, Magnetotelluric studies of continent-continent collisions, *Surveys in Geophysics*, 31(2), 137-161, doi 10.1007/s10712-009-9086-y, March 2010.
- (67) Wei W, Jin S, Ye G, Deng M, Jing J, MJ Unsworth, AG Jones, Conductivity Structure and rheological properties of the lithosphere of the Southern Tibet Plateau – results of Super-wide band Magnetotelluric Sounding, *Science in China, Series D*, 39(11), 1591-1606, January 2010.
- (66) Jin S, Wei W, Ye G, Deng M, Tan H, MJ Unsworth, The electrical structure of the Bangong –Nuijiang suture : results from magnetotelluric sounding detection, *Chinese Journal of Geophysics*, 52(10) , 2666-2675, doi: 10.3969/j.issn.0001-5733.1029.10.027 October 2009
- (65) Unsworth MJ, A plate boundary in flux, *Nature Geoscience*, 2 (9), 605-606, September 2009
- (64) **Bertrand EA**, MJ Unsworth, CW Chiang, CS Chen, CC Chen, FT Wu, E Turkoglu, HK Hsu, G Hill, Magnetotelluric studies of the arc-continent collision in Central Taiwan, *Geology*, 37(8), 711- 714, August 2009.
- (63) **Turkoglu E**, MJ Unsworth, D Pana, Deep electrical structure of Northern Alberta (Canada): Implications for diamond exploration, *Canadian Journal of Earth Sciences*, 46, 139-154, March 2009.
- (62) **Chiang CW**, MJ Unsworth, CS Chen, CC Chen, TS Lin, HL Shu, Fault Zone resistivity structure and monitoring at the Taiwan Chelungpu Drilling Project (TCDP) *Terrestrial Atmospheric and Ocean Sciences*, 19(5), 473-479, October 2008.
- (61) **Turkoglu E**, MJ Unsworth, I Caglar, V Tuncer, U Avsar, Lithospheric structure of the Arabia-Eurasia collision zone in Eastern Anatolia from magnetotelluric exploration : evidence for widespread weakening by fluids, *Geology*, 36 (8), 619-622, August 2008.
- (60) Wannamaker PE, DP Hasterok, JM Johnston, JA Stodt, DB Hall, TL Sodergren, L Pellerin, V Maris, WM Doerner and MJ Unsworth, Lithospheric Dismemberment and Magmatic Processes of the Great Basin-Colorado Plateau Transition, Utah, Implied from Magnetotellurics, *Geochemistry, Geophysics Geosystems*, 9, Q05019, doi:10.1029/2007GC001886, May 2008.
- (59) Wei W, S Jin, G Ye, M Deng, H Tan, MJ Unsworth, J Booker, AG Jones, S Li, Features of faults in the central and northern Tibetan Plateau based on results of INDEPTH (III) – MT, *Frontiers Earth Science, China*, doi 10.1007/s11707-007-0016-3, 191), 121-128, 2007.

- (58) Craven JA, McNeice G, Powell B, Koch R, Annesley IR, Wood G, Mwenifumbo CJ, Unsworth MJ, and **Xiao W**, 2007: Audio-magnetotelluric studies at the McArthur River mining camp and Shea Creek area, northern Saskatchewan; in EXTECH IV: Geology and Uranium EXploration TECHnology of the Proterozoic Athabasca Basin, Saskatchewan and Alberta, (ed.) C.W. Jefferson and G. Delaney; Geological Survey of Canada, Bulletin 588 (also Saskatchewan Geological Society, Special Publication 18; Geological Association of Canada, Mineral Deposits Division, Special Publication 4), p. 413-424.
- (57) Unsworth MJ, Transfer functions, in *Encyclopaedia of Geomagnetism and Paleomagnetism*, edited by D Gubbins and E Herrero-Bervera, Springer, 953-954, 2007b.
- (56) Unsworth MJ, Magnetotellurics, in *Encyclopaedia of Geomagnetism and Paleomagnetism*, edited by D Gubbins and E Herrero-Bervera, Springer, 670-673, 2007a.
- (55) Ye G, Jin S, Wei W, Unsworth MJ, Research of the conductive structure of crust and upper mantle beneath the South-Central Tibetan Plateau, *Journal of China University of Geosciences*, 18(4), 334-343, 2007.
- (54) Unsworth MJ, **W Soyer, V Tuncer**, A Wagner, D Barnes, Hydrogeologic assessment of the Amchitka Island nuclear test site (Alaska) with magnetotellurics, *Geophysics*, 72 (3), B47-B57, 2007.
- (53) Chen CS, CC Chen, CW Chiang, HL Shu, WH Chiu and MJ Unsworth, **EA Bertrand**, Crustal Resistivity Anomalies beneath Central Taiwan Imaged by a Broadband Magnetotelluric Transect, *Terrestrial Atmospheric and Ocean Sciences*, 18, (1), 19-30, 2007.
- (52) Arora B, MJ Unsworth, G Rawat, Deep resistivity structure of the Northwest Indian Himalaya and its tectonic implications, *Geophysical Research Letters*, 34, L04307, doi:10.1029/2006GL029165, 2007.
- (51) **Bedrosian PA**, MJ Unsworth and M Johnston, Hydrothermal circulation at Mount St. Helens determined by self-potential measurements, *Journal of Volcanology and Geothermal Research*, 160, 137-146, 2007.
- (50) Jin S, Ye G, Wei W, Deng M, Unsworth MJ, The electrical structure and faults of the crust of south-eastern Tibetan plateau – result of magnetotelluric prospecting on profile from Xiachayu-Changdu, *Earth Science Frontiers*, 13(5), 408-415, 2006.
- (49) Di Q, MJ Unsworth and Wang M, 2.5-D finite element CSAMT numerical inversion. *Oil geophysical prospecting*, 41(1): 100-106, 2006.
- (48) Wei W, S Jin, G Ye, M Deng, H Tan, MJ Unsworth, AG Jones, J Booker, S Li, Conductivity structure of crust and upper mantle beneath the northern Tibet: Results of super-wide band magnetotelluric sounding, *Chinese Journal of Geophysics*, (in English), 49(4), 1215-1225, 2006.
- (47) Unsworth MJ, Geophysics on the roof of the world, *Canadian Society of Exploration Geophysicists Recorder*, 31(10), 26-32, 2006.

- (46) **Tuncer V**, MJ Unsworth, W Siripunvaraporn and JA Craven, Exploration for unconformity type uranium deposits with audio-magnetotelluric data: A case study from the McArthur River Mine, Saskatchewan (Canada), *Geophysics*, 71(6), B201-B209, 2006.
- (45) **Xiao W** and MJ Unsworth, Structural imaging in the Rocky Mountain Foothills (Alberta) using magnetotelluric exploration, *AAPG Bulletin*, 90, 321-333, 2006.
- (44) **Soyer W** and MJ Unsworth, Deep electrical structure of the northern Cascadia subduction zone (British Columbia, Canada): implications for the role of fluids, *Geology*, 34, 1, 53-56, doi: 10.1130/G21951.1, 2006.
- (43) Unsworth MJ, AG Jones, W Wei, G Marquis, S Gokarn, JE Spratt, Crustal rheology of the Himalaya and Southern Tibet inferred from magnetotelluric data, *Nature*, 438, 78-81, doi:10.1038/nature04154, 2005.
- (42) Solon K, AG Jones, KD Nelson, MJ Unsworth, W Wei, H Tan, S Jin, M Deng, JR Booker, **S Li**, **PA Bedrosian**, Structure of the crust in the vicinity of the Banggong-Nujiang suture central Tibet from INDEPTH magnetotelluric data, *Journal of Geophysical Research*, 110, B10102, doi: 10.1029/2003JB002405, 2005.
- (41) Spratt JE, AG Jones, KD Nelson, MJ Unsworth and the INDEPTH MT team, Crustal structure of the India-Asia collision zone, southern Tibet, from INDEPTH MT investigations, *Physics of the Earth and Planetary Interiors*, 150, 227-237, May 2005.
- (40) Unsworth MJ, New developments in conventional hydrocarbon exploration with electromagnetic methods, *Canadian Society of Exploration Geophysicists Recorder*, pp 34-38, April 2005.
- (39) Eaton DW, J Adams, I Asudeh, GM Atkinson, MG Bostock, JF Cassidy, IJ Ferguson, C Samson, DB Snyder, KF Tiampo and MJ Unsworth, Investigating Canada's Lithosphere and Earthquake Hazards with Portable Arrays, *Eos*, 86, 17, 169-173, 2005.
- (38) Tan H, W Wei, MJ Unsworth, M Deng, S Jin, JR Booker, AG Jones, Crustal Electrical Conductivity Structure of Yarlung Zangbo Jiang Suture in Southern Tibetan Plateau, *Chinese J. Geophysics*, (in English), 47(4), 780-786, 2004.
- (37) Di Q, MJ Unsworth and Wang M, 2.5 D CSAMT modelling with the finite element method over complex earth media. *Chinese Journal of Geophysics*, 47(4): 723-730, 2004.
- (36) Di Q, MJ Unsworth and Wang M, 2.5 D CSAMT modelling with finite element method. *Progress in Geophysics*, 19(2): 317-324, 2004.
- (35) Unsworth MJ and **PA Bedrosian**, The geoelectric structure of major strike-slip faults and shear zones, *Earth Planets and Space*, 56, 1177-1184, 2004.
- (34) **Bedrosian PA**, MJ Unsworth, GD Egbert and CH Thurber, Geophysical images of the creeping segment of the San Andreas fault: implications for the role of crustal fluids in the earthquake process, *Tectonophysics*, 385, doi:10.1016/j.tecto.2004.02.010, 2004.

- (33) Unsworth MJ and **PA Bedrosian**, Electrical resistivity at the SAFOD site from magnetotelluric exploration, *Geophysical Research Letters*, 31, L12S05, doi:10.1029/2003GL019405, 2004.
- (32) Campos-Enriquez O, FJ Chavez-Garcia, FJ Cruz, JG Acosta-Chang, T Matsui, J Arzate, MJ Unsworth, and J Ramos-Lopez, Shallow crustal structure of Chicxulub Impact Crater imaged with seismic, gravity and magnetotelluric data: inferences about the central uplift, *Geophysical Journal International*, 157, 515-525, 2004.
- (31) Unsworth MJ, W Wei, AG Jones, S Li, **PA Bedrosian**, JR Booker, S Jin, and M Deng, Crustal and upper mantle structure of Northern Tibet imaged with magnetotelluric data, *Journal of Geophysical Research*, 109, doi:10.1029/2002JB002305, 2004.
- (30) Unsworth MJ, Studying continental dynamics with magnetotelluric exploration, *Earth Science Frontiers*, 10, 25-38, 2003.
- (29) **Li S**, MJ Unsworth, JR Booker, W Wei, H Tan and AG Jones, Partial melt or aqueous fluids in the Tibetan crust: constraints from INDETH magnetotelluric data, *Geophysical Journal International*, 153, 289-304, 2003.
- (28) Unsworth MJ, The role of crustal fluids in strike-slip tectonics: new insights from magnetotelluric studies, *Turkish Journal of Earth Sciences*, 11, 193-203, 2002.
- (27) Unsworth MJ, O Campos-Enriquez, S Belmonte, **PA Bedrosian** and J Arzate, Crustal structure of the Chicxulub Impact Crater imaged with magnetotelluric exploration, *Geophysical Research Letters*, 2002GL014998, 2002.
- (26) **Bedrosian PA**, MJ Unsworth and GD Egbert, Magnetotelluric imaging of the creeping segment of the San Andreas Fault near Hollister, *Geophysical Research Letters*, 29, 1506, doi:10.1029/2001GL012119, 2002.
- (25) **Bedrosian PA**, MJ Unsworth and F Wang, Structure of the Altyn Tagh Fault and Daxue Shan from magnetotelluric surveys: implications for faulting associated with the rise of the Tibetan Plateau, *Tectonics*, 20, 474-486, 2001.
- (24) Wei W, MJ Unsworth, AG Jones, JR Booker, H Tan, KD Nelson, L Chen, S Li, K Solon, **PA Bedrosian**, S Jin, M Deng, J Ledo, D Kay, B Roberts, Detection of widespread fluids in the Tibetan crust by magnetotelluric studies, *Science*, 292, 716-718, 2001.
- (23) Unsworth MJ, **PA Bedrosian**, M Eisel, GD Egbert, W Siripunvaraporn, Along-strike variations in the electrical structure of the San Andreas Fault at Parkfield, California, *Geophysical Research Letters*, 27, 3021-3024, 2000.
- (22) Unsworth MJ, **X Lu** and MD Watts, CSAMT exploration at Sellafield: characterization of a potential radioactive waste disposal site, 65, 1070-1079, *Geophysics*, 2000.
- (21) Evans RL, P Tarits, AD Chave, A White, G Heinson, JH Filloux, H Toh, N Seama, H Utada, JR Booker and MJ Unsworth, Asymmetric electrical structure in the mantle Beneath the East Pacific Rise at 17°S, *Science*, 286, 752-756, 1999.

- (20) Unsworth MJ, Magnetotellurics, in *McGraw-Hill 2000 Yearbook of Science and Technology*, McGraw-Hill, New York, 240-242, 1999.
- (19) **Lu X**, MJ Unsworth and JR Booker, Rapid relaxation inversion of CSAMT data, *Geophysical Journal International*, 138, 381-392, 1999.
- (18) Unsworth MJ, GD Egbert and JR Booker, High Resolution electromagnetic imaging of the San Andreas Fault in Central California, *Journal of Geophysical Research*, 104, 1131-1150, 1999.
- (17) **Tyler RH**, TB Sanford and MJ Unsworth, Propagation of electromagnetic fields in the coastal ocean with application to underwater navigation and communication, *Radio Science*, 33, 967-987, 1998.
- (16) **Aprea CM**, MJ Unsworth and JR Booker, Resistivity structure of the Olympic Mountains and Puget Lowlands, *Geophysical Research Letters*, 25, 109-112, 1998.
- (15) **Lu X**, MJ Unsworth and JR Booker, Two Dimensional Inversion of Tensor CSAMT data, *Expanded abstracts 67th Ann. Internat. Mtg.*, 362-365, Society of Exploration Geophysicists, 1997.
- (14) Unsworth MJ, X Lu and MD Watts, Site characterization for radioactive waste disposal using CSAMT, *Expanded abstracts 67th Ann. Internat. Mtg.*, 358-361, Society of Exploration Geophysicists, 1997.
- (13) Booker JR, **CM Aprea**, MJ Unsworth and N Wu, Electrical Conductivity Structure in Major Tectonic Zones, *Geowissenschaften*, 15, 111-115, 1997.
- (12) Unsworth MJ, PE Malin, GD Egbert and JR Booker, Internal Structure of the San Andreas Fault Zone at Parkfield, California, *Geology*, 25, 359-362, 1997.
- (11) Nelson KD, W Zhao, LD Brown, J Kuo, J Che, X Liu, SL Klemperer, Y Makovsky, R Meissner, J Mechie, R Kind, F Wenzel, J Ni, J Nabelek, L Chen, H Tan, W Wei, AG Jones, JR Booker, MJ Unsworth, WSF Kidd, M Hauck, D Alsdorf, A Ross, M Cogan, C Wu, E Sandvol, M Edwards, Partially molten Middle Crust Beneath Southern Tibet : Synthesis of Project INDEPTH results, *Science*, 274, 1684-1686, 1996.
- (10) Chen L, JR Booker, AG Jones, N Wu, MJ Unsworth, W Wei, H Tan, Electrically Conductive Crust in Southern Tibet from INDEPTH magnetotelluric surveying, *Science*, 274, 1694-1696, 1996.
- (9) Ogawa Y, AG Jones, MJ Unsworth, JR Booker, X Lu, JA Craven, B Roberts, J Parmelee, CG Farquharson, Deep electrical conductivity structures of the Appalachian Orogen in the south-eastern United States, *Geophysical Research Letters*, 23, 1597-1600, 1996.
- (8) Wannamaker PE, AD Chave, JR Booker, AG Jones, JH Filloux, Y Ogawa, MJ Unsworth, P Tarits and RL Evans, Magnetotelluric Experiment Probes Deep Physical State of South-eastern United States, *Eos, Trans. AGU*, 77, 329, 1996.

- (7) Unsworth MJ and DW Oldenburg, Subspace inversion of electromagnetic data: application to mid-ocean ridge exploration, *Geophysical Journal International*, 123, 161-168, 1995.
- (6) Evans RL, MC Sinha, SC Constable, MJ Unsworth, On the electrical nature of the axial melt zone at 13° N on the East Pacific Rise, *Journal of Geophysical Research*, 99, 577-588, 1994.
- (5) Unsworth MJ, Exploration of mid-ocean ridges with a frequency domain electromagnetic system, *Geophysical Journal International*, 116, 447-467, 1994.
- (4) Unsworth MJ, BJ Travis and AD Chave, Electromagnetic induction by a finite electric dipole source over a 2-D earth, *Geophysics*, 58, 198-214, 1993.
- (3) Evans RL, SC Constable, MC Sinha, CS Cox and MJ Unsworth, Upper Crustal Resistivity Structure of the East Pacific Rise near 13° N, *Geophysical Research Letters*, 18, 1917-1920, 1991.
- (2) Unsworth MJ, Electromagnetic Exploration of the Oceanic Crust with Controlled sources, PhD Thesis, University of Cambridge, 1991.
- (1) Sinha MC, PD Patel, MJ Unsworth, TRE Owen, and MD MacCormack, An Active Source Electromagnetic Sounding System for Marine use, *Marine Geophysical Research*, 12, 59-68, 1990.