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Geology and Geophysics  
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## Research Profile

Tectonics, seismology, rifting, magmatism, strike-slip faulting, gravity, seismic reflection acquisition, seismic reflection processing, gravity data acquisition and processing.

## Employment

### Senior Lecturer

Senior Lecturer  
Geology and Geophysics  
Physical Sciences  
1 Dec 2021 → present

### Competitions Officer

British Geophysical Association  
United Kingdom  
1 Feb 2015 → present

## Research outputs

### Post-subduction tectonics induced by extension from a lithospheric drip

Pilia, S., Davies, D. R., Bacon, C., Gilligan, A., Greenfield, T., Tongkul, F., Kramer, S. C., Wilson, C. R., Ghelichkhan, S., Cornwell, D., Colli, L. & Rawlinson, N., 11 May 2023, (Accepted/In press) In: Nature Geoscience.

### Seismic signature of subduction termination from teleseismic P- and S-wave arrival-time tomography: the case of northern Borneo

Pilia, S., Rawlinson, N., Hall, R., Cornwell, D. G., Gilligan, A. & Tongkul, F., 1 Mar 2023, In: Gondwana Research. 115, p. 57-70 14 p.

### The signature of lithospheric anisotropy at post-subduction continental margins: new insight from XKS splitting analysis in northern Borneo

Bacon, C. A., Rawlinson, N., Pilia, S., Gilligan, A., Wehner, D., Cornwell, D. & Tongkul, F., 6 Nov 2022, In: Geochemistry, Geophysics, Geosystems . 23, 11, 17 p., e2022GC010564.

### Collision-Induced Subduction Polarity Reversal Explains the Crustal Structure of Northern Borneo: New Results From Virtual Deep Seismic Sounding (VDSS)

Linang, H. T., Pilia, S., Rawlinson, N., Bacon, C. A., Gilligan, A., Cornwell, D. G. & Tongkul, F., 16 Oct 2022, In: Geophysical Research Letters. 49, 19, 10 p., e2022GL099123.

### Post-Subduction Tectonics of Sabah, Northern Borneo, Inferred From Surface Wave Tomography

Greenfield, T., Gilligan, A., Pilia, S., Cornwell, D. G., Tongkul, F., Widiyantoro, S. & Rawlinson, N., 16 Feb 2022, In: Geophysical Research Letters. 49, 3, 12 p., e2021GL096117.

### Structure of the northwestern North Anatolian Fault Zone imaged via teleseismic scattering tomography

Rost, S., Houseman, G. A., Frederiksen, A. W., Cornwell, D. G., Kahraman, M., Altuncu Poyraz, S., Teoman, U. M., Thompson, D. A., Turkelli, N., Gülen, L., Utkucu, M. & Wright, T. J., 1 Nov 2021, In: Geophysical Journal International. 227, 2, p. 922–940 19 p.

**Cool deltas: Sedimentological, geomorphological and geophysical characterization of ice-contact deltas and implications for their reservoir properties (Salpausselkä, Finland)**

Kurjanski, B., Rea, B., Spagnolo, M., Cornwell, D., Howell, J., Comte, J.-C., Gonzalez Quiros, A., Palmu, J.-P., Oien, R. & Gibbard, P., 19 Jul 2021, (E-pub ahead of print) In: *Sedimentology*. 68, 7, p. 3057-3101 45 p.

**Thermo-Hydro-Mechanical Model and Caprock Deformation Explain the Onset of an On-going Seismo-volcanic Unrest**

Akande, W. G., Gan, Q., Cornwell, D. & de Siena, L., Mar 2021, In: *Journal of Geophysical Research: Solid Earth*. 126, 3, 26 p., e2020JB020449.

**Crustal structure of southeast Australia from teleseismic receiver functions**

Bello, M., Cornwell, D. G., Rawlinson, N., Reading, A. M. & Likkason, O. K., 24 Feb 2021, In: *Solid earth*. 12, 2, p. 463-481 19 p.

**New insights into North Sea deep crustal structure and extension from transdimensional ambient noise tomography**

Crowder, E., Rawlinson, N., Cornwell, D. G., Sammarco, C., Galetti, E. & Curtis, A., 1 Feb 2021, In: *Geophysical Journal International*. 224, 2, p. 1197–1210 14 p.

**Hot water injection in relation to 1982-84 microseismic events at Campi Flegrei Caldera by thermo-hydro-mechanical simulation**

Akande, W. G., Gan, Q., De Siena, L. & Cornwell, D. G., 18 Nov 2020, In: *E3S Web of Conferences*. 205, 7 p., 02008.

**Global quieting of high-frequency seismic noise due to COVID-19 pandemic lockdown measures**

Lecocq, T., Hicks, S. P., Van Noten, K., van Wijk, K., Koelemeijer, P., De Plaen, R. S. M., Massin, F., Hillers, G., Anthony, R. E., Apoloner, M.-T., Arroyo-Solórzano, M., Assink, J. D., Büyükkapınar, P., Cannata, A., Cannavo, F., Carrasco, S., Caudron, C., Chaves, E. J., Cornwell, D., Craig, D., & 56 othersden Ouden, O. F. C., Diaz, J., Donner, S., Evangelidis, C. P., Evers, L., Fauville, B., Fernandez, G. A., Giannopoulos, D., Gibbons, S. J., Girona, T. G., Grecu, B., Grunberg, M., Hetényi, G., Horleston, A., Inza, A., Irving, J. C. E., Jamalreyhani, M., Kafka, A., Koymans, M. R., Labeledz, C. R., Larose, E., Lindsey, N. J., McKinnon, M., Megies, T., Miller, M. S., Minarik, W., Moresi, L., Márquez-Ramírez, V. H., Möllhoff, M., Nesbitt, I. M., Niyogi, S., Ojeda, J., Oth, A., Proud, S., Pulli, J., Retailleau, L., Rintamäki, A. E., Satriano, C., Savage, M. K., Shani-Kadmiel, S., Sleeman, R., Sokos, E., Stammler, K., Stott, A. E., Subedi, S., Sørensen, M. B., Taira, T., Tapia, M., Turhan, F., van der Pluijm, B., Vanstone, M., Vergne, J., Vuorinen, T. A. T., Warren, T., Wassermann, J. & Xiao, H., 11 Sept 2020, In: *Science*. 369, 6509, p. 1338-1343 6 p.

**Ice-contact deltas investigation using ground penetrating radar (GPR), sedimentology, electrical resistivity tomography (ERT) and , Salpausselka I and II near Lahti, Finland**

Kurjanski, B., Rea, B., Spagnolo, M., Cornwell, D., Palmu, J.-P., Howell, J., Quiros, A. & Comte, J.-C., 4 May 2020. 10 p.

**A conceptual model for glaciogenic reservoirs: from landsystems to reservoir architecture**

Kurjanski, B., Rea, B. R., Spagnolo, M., Cornwell, D. G., Howell, J. & Archer, S., May 2020, In: *Marine and Petroleum Geology*. 115, 33 p., 104205.

**Variations in North Sea crustal structure and rifting style constrained by transdimensional ambient seismic noise tomography**

Crowder, E., Rawlinson, N., Cornwell, D. G., Sammarco, C., Galetti, E. & Curtis, A., 22 Sept 2019

**Structure of the crust and upper mantle beneath Bass Strait, southeast Australia, from teleseismic body wave tomography**

Bello, M., Rawlinson, N., Cornwell, D., Crowder, E., Salmon, M. & Reading, A. M., Sept 2019, In: *Physics of the Earth and Planetary Interiors*. 294, 15 p., 106276.

**Morphological evidence for marine ice stream shutdown, central Barents Sea**

Kurjanski, B., Rea, B. R., Spagnolo, M., Winsborrow, M., Cornwell, D. G., Andreassen, K. & Howell, J., 1 Aug 2019, In: *Marine Geology*. 414, p. 64-76 13 p.

**Transdimensional ambient noise tomography of Bass Strait, southeast Australia, reveals the sedimentary basin and deep crustal structure beneath a failed continental rift**

Crowder, E., Rawlinson, N., Pilia, S., Cornwell, D. G. & Reading, A. M., 1 May 2019, In: Geophysical Journal International. 217, 2, p. 970-987 18 p.

**Insights into the structure and dynamics of the upper mantle beneath Bass Strait, southeast Australia, using shear wave splitting**

Bello, M., Cornwell, D. G., Rawlinson, N. & Reading, A. M., Apr 2019, In: Physics of the Earth and Planetary Interiors. 289, p. 45-62 18 p.

**Interaction of the Cyprus/Tethys slab with the mantle transition zone beneath Anatolia**

Taylor, G., Thompson, D. A., Cornwell, D. & Rost, S., 1 Mar 2019, In: Geophysical Journal International. 216, 3, p. 1665-1674 10 p.

**The role of pre-existing Precambrian structures in the development of Rukwa Rift Basin, southwest Tanzania**

Lemna, O. S., Stephenson, R. & Cornwell, D. G., 1 Feb 2019, In: Journal of African Earth Sciences. 150, p. 607-625 19 p.

**Ambient Seismic Noise Image of the Structurally Controlled Heat and Fluid Feeder Pathway at Campi Flegrei Caldera**

de Siena, L., Sammarco, C., Cornwell, D. G., La Rocca, M., Bianco, F., Zaccarelli, L. & Nakahara, H., 16 Jul 2018, In: Geophysical Research Letters. 45, 13, p. 6428-6436 9 p.

**Extensive marine-terminating ice sheets in Europe from 2.5 million years ago**

Rea, B. R., Newton, A. M. W., Lamb, R. M., Harding, R., Bigg, G. R., Rose, P., Spagnolo, M., Huuse, M., Cater, J. M. L., Archer, S., Buckley, F., Halliyeva, M., Huuse, J., Cornwell, D. G., Brocklehurst, S. H. & Howell, J. A., 13 Jun 2018, In: Science Advances. 4, 6, 12 p., eaar8327.

**Reply to the discussion on 'A 2.3 Million Year Lacustrine Record of Orbital Forcing from the Devonian of Northern Scotland', Journal of the Geological Society, London 173, 474-488**

Andrews, S. D., Cornwell, D. G., Trewin, N. H., Hartley, A. J. & Archer, S. G., May 2018, In: Journal of the Geological Society. 173, 3, p. 563 1 p.

**Constraints on North Anatolian Fault Zone Width in the Crust and Upper Mantle From S Wave Teleseismic Tomography**

Papaleo, E., Cornwell, D. G. & Rawlinson, N., Apr 2018, In: Journal of Geophysical Research: Solid Earth. 123, 4, p. 2908-2922 15 p.

**Ambient noise tomography reveals basalt and sub-basalt velocity structure beneath the Faroe Islands, North Atlantic**

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**Seismic tomography of the North Anatolian Fault: New insights into structural heterogeneity along a continental strike-slip fault**

Papaleo, E., Cornwell, D. G. & Rawlinson, N., 16 Mar 2017, In: Geophysical Research Letters. 44, 5, p. 2186-2193 8 p.

**FracPaQ: A MATLAB™ toolbox for the quantification of fracture patterns**

Healy, D., Rizzo, R. E., Cornwell, D. G., Farrell, N. J. C., Watkins, H., Timms, N. E., Gomez-Rivas, E. & Smith, M., Feb 2017, In: Journal of Structural Geology. 95, p. 1-16 16 p.

**A 2.3 million year lacustrine record of orbital forcing from the Devonian of northern Scotland**

Andrews, S. D., Cornwell, D. G., Trewin, N. H., Hartley, A. J. & Archer, S. G., May 2016, In: Journal of the Geological Society. 173, 3, p. 474-488 15 p.

**Crustal-scale shear zones and heterogeneous structure beneath the North Anatolian Fault Zone, Turkey, revealed by a high-density seismometer array**

Kahraman, M., Cornwell, D. G., Thompson, D. A., Rost, S., Houseman, G. A., Turkelli, N., Teoman, U., Altuncu Poyraz, S., Utkucu, M. & Gulen, L., 15 Nov 2015, In: Earth and Planetary Science Letters. 430, p. 129-139 11 p.

**Tectonic variation and structural evolution of the West Greenland continental margin**

Alsulami, S., Paton, D. A. & Cornwell, D. G., Sept 2015, In: AAPG Bulletin. 99, 9, p. 1689-1711 23 p.

**New constraints on micro-seismicity and stress state in the western part of the North Anatolian Fault Zone: Observations from a dense seismic array**

Altuncu Poyraz, S., Teoman, M. U., Turkelli, N., Kahraman, M., Cambaz, D., Mutlu, A., Rost, S., Houseman, G. A., Thompson, D. A., Cornwell, D., Utkucu, M. & Gulen, L., 12 Aug 2015, In: Tectonophysics. 656, p. 190-201 12 p.

**Crustal thickness variations and isostatic disequilibrium across the North Anatolian Fault, western Turkey**

Frederiksen, A. W., Thompson, D. A., Rost, S., Cornwell, D. G., Gulen, L., Houseman, G. A., Kahraman, M., Altuncu Poyraz, S. A., Teoman, U. M., Turkelli, N. & Utkucu, M., 16 Feb 2015, In: Geophysical Research Letters. 42, 3, p. 751-757 7 p.

**Mantle transition zone variations beneath the Ethiopian Rift and Afar: Chemical heterogeneity within a hot mantle?**

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**Imaging detailed crustal structure and magmatic intrusion across the Ethiopian Rift using a dense linear broadband array**

Cornwell, D. G., Maguire, P. K. H., England, R. W. & Stuart, G. W., 9 Jan 2010, In: Geochemistry, Geophysics, Geosystems . 11, 1, 21 p., Q0AB03.

**Lower crustal earthquakes near the Ethiopian rift induced by magmatic processes**

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**Northern Main Ethiopian Rift crustal structure from new high-precision gravity data**

Cornwell, D. G., Mackenzie, G. D., England, R. W., Maguire, P. K. H., Asfaw, L. M. & Oluma, B., 1 Jan 2006, In: Geological Society Special Publications . 259, p. 307-321 15 p.