

Selected publications (https://www.researchgate.net/profile/David_Quirk/publications)

- Quirk, D.G., et al., 2025. [Islands' Energy Transition League – a progress report on decarbonising island power systems](#). IEEEEX, Proceedings of 9th Hybrid Power Plants & Systems Workshop, Åland, pp.1-9.
- Quirk, D.G., et al., 2024. [Energy transition league: A comparison of islands' paths to net zero emissions](#). Proc. of 8th International Hybrid Power Plants & Systems Workshop (HYB 2024), Azores, pp.65-74.
- Quirk, D.G., 2024. Future Energy System Builder. [Green Power Cards](#). DTU Offshore, Denmark, 58 cards.
- Quirk, D.G., Boucher, J.D., Østergaard, P., Lund, H., da Silva, F., Camara, F. & Peake, R., 2023. How to quickly transition from 0% to 100% renewable energy on an island in the northwest corner of Europe? Proceedings of 7th International Hybrid Power Plants & Systems Workshop (HYB 2023), Faroes, pp. 19-19. [10.1049/icp.2023.1429](#)
- Quirk, D.G., Underhill, J.R., Gluyas, J.G., Howe, M.J., Wilson, H.A.M. & Anderson, S., 2022. A low-carbon future for The North Sea Basin. In: Patruno et al., The North Sea, Geological Society London SP 494. [10.1144/SP494-2020-236](#)
- Quirk, D.G., et al., 2021. Greenhouse gas emissions and their effect on global temperatures. Supplementary material to Quirk, D.G., et al., 2022, A low-carbon future for The North Sea Basin.
- Quirk, D.G., Underhill, J.R., Gluyas, J.G., et al., 2021. The North Sea through the energy transition. First Break, 39, 29-41 (*awarded Nigel Anstey Award 2022 for the Best Paper published in First Break*). [10.3997/1365-2397.fb2021026](#)
- Quirk, D.G. & Archer, S.G., 2021. Exploration play statistics in the Southern North Sea region of The Netherlands and UK. In: Patruno et al., The North Sea, Geological Society London Special Publication 494.
- Quirk, D.G. & Archer, S.G., 2021. Exploration play statistics in the central-northern North Sea region of UK-Norway-Denmark. In: Patruno et al., The North Sea, Geological Society London Special Publication 494.
- Quirk, D.G. & Schmid, D.W., 2021. [A straightforward way of estimating the volumetric size of petroleum prospects in exploration](#). Journal of Petroleum Geology, January 2021. [Free online tool](#)
- Quirk, D.G. & Rüpke, L., 2018. Melt-induced buoyancy may explain the elevated rift-rapid sag paradox during breakup of continental plates. Scientific Reports: www.nature.com/articles/s41598-018-27981-2
- Quirk, D.G. et al., 2018. Can oil and gas exploration deliver on prediction? First Break, 36, 83-88.
- Quirk, D.G., Howe, M.J. & Archer, S.J., 2017. Yet-to-find in play analysis: a combined deterministic-probabilistic method of estimating undiscovered hydrocarbon resources. J Petroleum Geol, 40, 217-248
- Quirk, D.G., Shakerley, A. & Howe, M.J., 2014. A mechanism for construction of volcanic rifted margins during continental breakup. Geology, 42, 1079-1082.
- Quirk, D.G., Hertle, M., Jeppesen, J.W., et al., 2013. Rifting, subsidence and continental break-up above a mantle plume in the central South Atlantic. In: Mohriak et al., eds., Geol Soc Spec Pub, 369, 185-214.
- Ford, T.D., Burnett, D. & Quirk, D., 2013. The Geology of the Isle of Man. Geologists' Association Guide 46.
- Quirk, D.G. & Pilcher, R.S., 2012. Flip-flop salt tectonics. In: Alsop, et.al., eds., Salt Tectonics, Sediments and Prospectivity, Geological Society London Special Publications, 363, 245-264.
- Quirk, D.G., Schødt, N., Lassen, B., et al., 2012. Salt tectonics on passive margins: examples from Santos, Campos and Kwanza basins. In: Alsop, et.al., eds., op. cit., 207-244.
- Quirk, D.G. & Ruthrauff, R.G., 2008. Toward consistency in petroleum exploration: A systematic way of constraining uncertainty in prospect volumetrics. AAPG Bulletin, 92, 1263-1291.
- Quirk, D.G. & Ruthrauff, R.G., 2006. Analysis of reserves discovered in petroleum exploration. Journal of Petroleum Geology, 29, 125-146.
- Quirk, D. et al., 2006. A New History of the Isle of Man: Volume 1 – The Evolution of the Natural Landscape. Ch 1-6 (main stratigraphic intervals) & Ch 10 (Economic Geology), 1-125 & 357-378.

- Burnett, D.J. & Quirk, D.G., 2001. Manx Geology – a guide to the rocks of the Isle of Man. Lightmoor Press.
- Burnett, D.J. & Quirk, D.G., 2001. Chemostratigraphy of deep marine sediments in the Lower Palaeozoic Manx Group, Isle of Man. *Journal of the Geological Society, London*, 158, 913-924.
- Quirk, D.G., Stocks, A.E. & Misker, F., 1999. Well log stacking: a new technique to improve lateral prediction and sequence stratigraphic interpretation with wireline data. *First Break*, 17, 131-143.
- Quirk, D.G., Roy, S., Knott, I., Redfern, J. & Hill, L., 1999. Petroleum geology and future hydrocarbon potential of the Irish Sea. *Journal of Petroleum Geology*, 22, 243-260.
- Aitken, J.F., Quirk, D.G. & Guion, P.G., 1999. Regional correlation of Westphalian sandbodies onshore UK: implications for reservoirs in the Southern North Sea. In: Fleet & Bouldy, eds, *Petroleum Geology of NW Europe: Proceedings of the 5th Conference*, Geological Society, London, 747-756.
- Quirk, D.G. & Burnett, D.J., 1999. Lithofacies of Lower Palaeozoic deep-marine sediments in the Isle of Man: a new map and stratigraphic model of the Manx Group. In: Woodcock et al., eds, *In Sight of the Suture: the Palaeozoic Geology of the Isle of Man*, Geological Society of London Special Publication, 160, 69-88.
- Quirk, D.G., Burnett, D.J., Kimbell, G.S., Murphy, C.A. & Varley, J.S., 1999. Shallow geophysical and geological evidence for a regional-scale fault duplex in the Lower Palaeozoic of the Isle of Man. In: Woodcock et al., op. cit., 239-257.
- Kimbell, G.S. & Quirk, D.G., 1999. Crustal magnetic structure of the Irish Sea region: evidence for a major basement boundary beneath the Isle of Man. In: Woodcock et al., op. cit., 227-238.
- Racey, A., Goodall, J.G.S. & Quirk, D.G., 1999. Palynological and geochemical analysis of Carboniferous borehole and outcrop samples from the Isle of Man. *Journal of Petroleum Geology*, 22, 349-362.
- Quirk, D.G., et al., 1998. Insights into the collection and emplacement of granitic magma based on 3D seismic images of normal fault-related salt structures. *Terra Nova*, 10, 268-73.
- Quirk, D.G. & Aitken, J.F., 1997. Structure of the Westphalian in the northern part of the Southern North Sea. In: Ziegler et al., eds, *Petroleum Geology of the Southern North Sea*, Geological Society of London Special Publication, 123, 143-152.
- Quirk, D.G., 1997. Sequence stratigraphy of the Westphalian in the northern part of the Southern North Sea. In: Ziegler et al., op. cit., 153-167.
- Quirk, D.G. & Kimbell, G.S., 1997. Structural evolution of the Isle of Man and central part of the Irish Sea. In: Meadows et al., eds, *Petroleum Geology of the Irish Sea and Adjacent Areas*, Geological Society of London Special Publication, 124, 135-159.
- Quirk, D.G., 1996. Discussion on the relationship between bitumens and mineralization in the South Pennine Orefield, central England. *Journal of Geological Society of London*, 153, 653-656.
- Quirk, D.G., 1996. "Base profile" - a unifying concept in alluvial sequence stratigraphy. In: Howell & Aitken, eds, *High Resolution Sequence Stratigraphy: Innovations and Applications*, Geological Society SP, 104, 37-49.
- Quirk, D.G., 1993. Interpreting the Upper Carboniferous of the Dutch Cleaver Bank High. In: Parker, ed, *Petroleum Geology of NW Europe: Proc. of the 4th Conf.*, Geological Society, London, 697-706.
- Quirk, D.G., 1993. Origin of the Peak District Orefield. *UK Journal of Mines and Minerals*, 13, 4-15.
- Quirk, D.G. & Raynor, J.B., 1992. Electron spin resonance spectroscopic evidence for the conditions and sequence of calcite mineralisation in Wall Shaft Mine, Derbyshire. *Chemical Geology*, 95, 299-311.
- Quirk, D.G., Ford, T.D., King, J.A., Roberts, I.L., Postance, R.B. & Odell, I., 1990. Enigmatic boulders and syn-sedimentary faulting in the Carboniferous limestone of the Isle of Man. *Proceedings of the Yorkshire Geological Society*, 48, 99-113.
- Quirk, D.G., 1987. Structure & genesis of the South Pennine Orefield. PhD thesis, University of Leicester (incl. four published papers & ten conference presentations on mineralization & tectonics).

Selected conference sessions, workshops, field courses & oral presentations

- Quirk, D.G. et al., 2025. [Energy transition league: updated report on decarbonising island power systems](#). 9th Hybrid Power Plants & Systems Workshop, Åland, 3-4 Jun '25
- Quirk, D.G. et al., 2025. Climate change, carbon emissions and what we can do on a small island. 25th Inter-Island Environment Meeting 2025 ILEM, Isle of Man, 17-19 Sep '25
- Quirk, D.G., 2024. [Can an island run on renewable power?](#) Green Island Youth Conference, Isle of Man, 4 Jul '25. www.energysustainabilitycentre.im/news
- Quirk, D.G. et al., 2024. Energy transition league - a comparison of islands' paths to net-zero emissions. 8th Hybrid Power Plants & Systems Workshop, Azores, 14-15 May '24
- Quirk, D.G., 2024. 500 million years of climate change on the Isle of Man. Public talk at the Manx Museum, 15 Nov '24. www.youtube.com/watch?v=8eG819y-aPU
- Quirk, D.G. et al., 2023. [Can an island transition from total oil and gas dependence to 100% wind and solar power within 15 years?](#) 22nd Wind & Solar Integration Workshop, Lyngby, Denmark, 26-28 Sep '23
- Quirk, D.G. et al., 2023. How to transition from 0% to 100% renewable energy on the Isle of Man? 7th International Hybrid Power Plants & Systems Workshop, Faroe Islands, 23-24 May '23
- Quirk, D. & Burnett, D., 2023. Geology of the Isle of Man. Edinburgh Geological Society field trip, 11-15 May '23
- Quirk, D.G., Peake, R. & Boucher, J., 2022. [Options for sustainable power on the Isle of Man](#). Low-Carbon Island Conference, Isle of Man, 27 Oct '22. <https://youtu.be/14xvx1nWUG8>
- Brouwers, M. & Quirk, D.G., 2022. Convenors, AAPG/PESGB Energy Transition Forum, London, 19-20 May '22
- Quirk, D.G., 2021. [Options for net zero emissions in northern Europe](#). SEG Webinar, 22 Nov 21
- Quirk, D.G., et al., 2020. North Sea in transition: re-energizing the basin. 2020 PROSPEX Online, 15-16 Dec '20
- Quirk, D., 2020. Can economic recovery & climate action go hand in hand after COVID-19? Podcast #UCMtalks about COVID: reconstructing 'normal' – live online debate. University College Isle of Man, 7 Oct '20
- Quirk, D.G., 2020. How might the Isle of Man be carbon neutral? UCM Talk, Isle of Man, 15 Jan '20
- Quirk, D.G. & Schmid, D.W., 2019. Can we estimate realistic volumes for exploration prospects? AAPG Risk & Uncertainty Forum, Aberdeen, 18-19 Jun '19
- Quirk, D. & Burnett, D., 2019. Wessex Open University Geological Society Isle of Man Field Trip, 20-23 Jun '19
- Quirk, D.G., 2018. Low risk versus high reward? When is it better to explore beyond the proven fairway? Underexplored Plays, FORCE, Stavanger, 31 Oct-1 Nov '18
- Quirk, D.G. & Rüpke, L., 2018. The highs and lows of continental breakup. Interplay of heatflow, subsidence and continental break-up. Geological Society, London, 8-9 Oct '18
- Quirk, D.G. & Flanagan, K. (convenors), 2018. Future of the North Sea. Dedicated Session, 80th EAGE Conference, Copenhagen, 10-15 Jun '18
- Quirk, D.G., Archer, S.G. & Keith, G. (convenors), 2018. Risk & uncertainty in petroleum exploration. Workshop 15, 80th EAGE Conference, Copenhagen, 10-15 Jun '18
- Quirk, D.G., 2018. Fit-For-Purpose Play Analysis and Yet-to-Find. 80th EAGE Conference, Cph, 10-15 Jun '18
- Quirk, D.G., 2017. Does the petroleum geology change across the UK-Norway border? Cross-border exploration between UK and Norway. Geological Society of London, 27-28 Nov '17
- Quirk, D.G. & Rüpke, L.H., 2017. Geodynamic model of the Arabian Platform. 79th EAGE Conference, Paris
- Quirk, D.G., 2017. Yet-to-Find. Play Analysis workshop, 79th EAGE Conference, Paris, 12-15 Jun '17

- Quirk, D.G., 2016. Salt is a heavy fluid. Salt Tectonics - From Subsurface and Outcrop Observations to Modelling. EAGE 78th Conference & Exhibition, Vienna, 30 May-2 Jun '16
- Quirk, D.G. & Shakerley, A., 2016. Construction of magmatic rifted margins. Rifts III: Catching the Wave. London, 22-24 Mar '16
- Quirk, D.G. et al., 2014. Rift, Sag, Salt: the tectonic evolution of the Central South Atlantic oil province. 13th HGS-PESGB Conference on African E&P, Houston, 9-10 Sep '14
- Quirk, D.G., Shakerley, A. & Howe, M.J., 2014. Construction of magmatic rifted margins in the North Atlantic Volcanic Province. 4th Conjugate Margins Conference, St Johns, Newfoundland, 20-22 Aug '14
- Quirk, D.G. et al., 2013. Rifting and opening above a mantle plume in the Central South Atlantic. 12th PESGB-HGS Africa conference, London, 11-12 Sep '13. *Awarded Best Orally Presented Paper*
- Quirk, D.G., et al., 2012. Business-focused play analysis. EAGE Workshop, Malaga, 13-15 Feb '12
- Quirk, D.G., et al., 2012. Plate reconstruction of the Central South Atlantic. PaleoGIS Users Conference, Houston, 10 Oct '12
- Quirk, D.G., et al., 2010. Salt tectonics in Santos and Campos basins, Brazil. Salt Tectonics, Sediments and Prospectivity, London, 20-21 Jan '10
- Quirk, D.G., et al., 2008. Salt Tectonics in Santos Basin. Rio Oil & Gas Expo, Rio de Janeiro, 15-18 Sep '08
- Quirk, D.G., et al., 2008. Salt tectonics in SE Brazil. AAPG Annual Convention, San Antonio, 20-23 Apr '08
- Quirk, D.G. & Ruthrauff, R., 2007. Reserves prediction in exploration – the trap we have got ourselves into and how to deal with it. AAPG California 2007 Annual Meeting, Long Beach, California