Publication List

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Abstract

Comprehensive list of peer-reviewed publications, preprints, datasets, and outreach materials, presented in reverse chronological order (most recent first).

Peer reviewed publications[1]

References

Abram, Nerilie J, Ariaan Purich, Matthew H England, Felicity S McCormack, Jan M Strugnell, Dana M Bergstrom, Tessa R Vance, Tobias Stål, Barbara Wienecke, Petra Heil, et al. (2025). "Emerging Evidence of Abrupt Changes in the Antarctic Environment". In: *Nature* 644.8077, pp. 621–633. DOI: 10.1038/s41586-025-09349-5.

Al-Aghbary, Magued, Mohamed Osman Awaleh, Mohamed Jalludin, Mohamed Sobh, Christian Gerhards, and Tobias Staal (2025). "Improving Geothermal Heat Flow Predictions and Uncertainty Quantification Using Clustering-Based Quantile Regression Forests". In: *Authorea Preprints*. In Review for Geophysical Journal International.

Lösing, Mareen, William Colgan, Tobias Stål, Jörg Ebbing, Anne G Busck, Tong Zhang, Hélène Seroussi, Felicity McCormack, Dominik Fahrner, Leigh Stearns, et al. (2025). "Community Heat Flow Recommendations: Suitable Basal Boundary Conditions for Greenland and Antarctica in ISMIP7". In: Accepted for Publication in GEUS Bulletin.

Manassero, María Constanza, Kate Selway, Tobias Staal, Matthias Scheiter, Felicity S McCormack, Mareen Lösing, Jacqueline Ann Halpin, Bernd Kulessa, and Anya M Reading (2025). "Bed Topography and Subglacial Conditions of Denman Glacier, East Antarctica: Insights from Magnetotelluric Data and Interdisciplinary Studies". In: *Authorea Preprints*. Submitted for Publication. DOI: 10.22541/au.175883281.14619781/v1.

[1] Including Accepted, In Review and Submitted. Preprint DOI provided where applicable

Lösing, Mareen, Alan R. A. Aitken, Jörg Ebbing, Jacqueline Ann Halpin, Lu Li, Max Moorkamp, Anya M Reading, and Tobias Stål (2024). "Linking Tectonics and Crustal Thermal Properties in Southwestern Australia and East Antarctica Through Coupled Gravity and Magnetic Analysis". In: *Journal of Geophysical Research: Solid Earth*. DOI: 10.1029/2024JB030770.

Stål, Tobias, Jacqueline A Halpin, John W Goodge, and Anya M Reading (2024). "Geology Matters for Antarctic Geothermal Heat". In: *Geophysical Research Letters* 51.13. DOI: 10.1029/2024GL110098.

McCormack, Felicity S, Jason L Roberts, Christine F Dow, Tobias Stål, Jacqueline A Halpin, Anya M Reading, and Martin J Siegert (2022). "Fine-Scale Geothermal Heat Flow in Antarctica Can Increase Simulated Subglacial Melt Estimates". In: *Geophysical Research Letters* 49.15. DOI: 10.1029/2022GL098539.

Reading, Anya M, Tobias Stål, Jacqueline A Halpin, Mareen Lösing, Jörg Ebbing, Weisen Shen, Felicity S McCormack, Christine S Siddoway, and Derrick Hasterok (2022). "Antarctic Geothermal Heat Flow and Its Implications for Tectonics and Ice Sheets". In: *Nature Reviews Earth & Environment* 3.12, pp. 814–831. DOI: 10.1038/s43017-022-00348-y.

Stål, Tobias, Anya M Reading, Sven Fuchs, Jacqueline A Halpin, Mareen Lösing, and Ross J Turner (2022). "Properties and Biases of the Global Heat Flow Compilation". In: *Frontiers in Earth Science* 10. DOI: 10.3389/feart.2022.963525.

Sanchez, Guillaume, Jacqueline Ann Halpin, Matthew Gard, Derrick Hasterok, Tobias Staal, Tom Raimondo, Stefan Peters, and Alex Burton-Johnson (2021). "PetroChron Antarctica: A Geological Database for Interdisciplinary Use". In: *Geochemistry, Geophysics, Geosystems* 22.12, e2021GC010154. DOI: 10.1029/2021GC010154.

Stål, Tobias, Anya M Reading, Jacqueline A Halpin, and Joanne M Whittaker (2021). "Antarctic Geothermal Heat Flow Model: Aq1". In: *Geochemistry, Geophysics, Geosystems* 22.2. DOI: 10.1029/2020GC009428.

Morse, Peter E, Anya M Reading, and Tobias Stål (2020). "Exploratory Volumetric Deep Earth Visualization by 2.5D Interactive Compositing". In: *IEEE Transactions on Visualization and Computer Graphics* 28.7, pp. 2641–2653. DOI: 10.1109/TVCG.2020.3037226.

Stål, Tobias and Anya Reading (2020). "A Grid for Multidimensional and Multivariate Spatial Representation and Data Processing". In: DOI: 10.5334/jors.287.

Stål, Tobias, Anya M Reading, Jacqueline A Halpin, Steven J Phipps, and Joanne M Whittaker (2020). "The Antarctic Crust and Upper Mantle: A Flexible 3D Model and Software Framework for Interdisciplinary Research". In: *Frontiers in Earth Science* 8, p. 577502. DOI: 10.3389/feart.2020.577502.

Morse, Peter E, Anya M Reading, and Tobias Stål (2019). “Well-Posed Geoscientific Visualization Through Interactive Color Mapping”. In: *Frontiers in Earth Science* 7, p. 274. DOI: 10.3389/feart.2019.00274.

Stål, Tobias, Anya M Reading, Jacqueline A Halpin, and Joanne M Whittaker (2019). “A Multivariate Approach for Mapping Lithospheric Domain Boundaries in East Antarctica”. In: *Geophysical Research Letters*, pp. 10404–10416. DOI: 10.1029/2019GL083453.

Datasets

References

Anya M. Reading, Tobias Stål, and Ian Kelly (2024). *Australia*. DOI: 10.7914/J9CQ-XD60. URL: https://www.fdsn.org/networks/detail/8G_2024/.

Tobias Stål, Anya M. Reading, and Shyla Kupis (2023). *Ice Sheets and Interactions, East Antarctica*. DOI: 10.7914/74EN-YT90. URL: https://www.fdsn.org/networks/detail/5Q_2023/.

Tobias Stål, Anya M. Reading, Shyla Kupis, and James Newlands (2021). *Casey-Wilkins Adaptable Array*. DOI: 10.7914/SN/Z9_2021. URL: https://www.fdsn.org/networks/detail/Z9_2021/.

Anya M. Reading and Tobias Stål (2015). *CAD Seismic Deployment, Casey-Davis Region, East Antarctica*. DOI: 10.7914/NRW9-9825. URL: https://www.fdsn.org/networks/detail/9V_2015/.

Reports and Outreach

References

Global Heat Flow Data Assessment Group, Sven Fuchs, Florian Neumann, Ben Norden, Elif Balkan-Pazvantoglu, Samah Elbarbary, Alexey Petrunin, Graeme Beardsmore, Robert Harris, Raquel Negrete-Aranda, Jeffrey Poort, Massimo Verdoya, Shaowen Liu, Emma Chambers, Karina Fuentes-Bustillos, Eswara Rao Sidagam, Jhon Camilo Matiz-Leon, Mohammed Hichem Bencharef, Belay G. Mino, Mohamed Shafik Khaled, Denise Verch, Leonard Berger, Saman Firdaus Chishti, Viktoria Dergunova, Helena Liebing, Marvin Schulz, Pia Schuppe, Zlata Trepalova, Paolo Chiozzi, Maria Rosa Alves Duque, Florian Forster, Martina Leveni, and Tobias Staal (2024). “The Global Heat Flow Database: Update 2024”. In: DOI: 10.5880/fidgeo.2024.014.

Stål, Tobias (2024). “Fast Calculation of Ripley’s K and L Functions on a Sphere”. In: DOI: 10.5281/zenodo.6865006.

Stål, Tobias, Felicity S McCormack, Anya M Reading, Niam Askey-Doran, Jacqueline A Halpin, and Mareen Lösing (2024). “Geothermal Heat Shapes the Antarctic Ice Sheet from Below”. In: *Frontiers for Young Minds* 12, p. 1178537. DOI: 10.3389/frym.2023.1178537.

Global Heat Flow Data Assessment Group, Sven Fuchs, Florian Neumann, Ben Norden, Graeme Beardsmore, Paolo Chiozzi, William Colgan, Ana Paulina Anguiano Dominguez, Maria Rosa Alves Duque, Orlando Miguel Ojeda Espinoza, Florian Forster, Andrea Förster, Robert Fröhder, Karina Fuentes, Marek Hajto, Robert Harris, Argo Jõeleht, Helena Liebing, Shaowen Liu, Gwendolin Lüdtke, Mazlan Madon, Raquel Negrete-Aranda, Jeffrey Poort, Itay J. Reznik, Michael Riedel, Frédérique Rolandone, Tobias Staal, Massimo Verdoya, and Jyun-Nai Wu (2023). “The Global Heat Flow Database: Update 2023”. In: DOI: 10.5880/fidgeo.2023.008.

Selected Conference Abstracts

Stål, Tobias, Anya M Reading, Niam Askey-Doran, Sue Cook, Jakob Gradl, Thomas Hudson, Ian Kelly, Bernd Kulessa, Shyla Kupis, Mareen Lösing, Jared Magyar, Maria Constanza Manassero, Matthias Scheiter, Kate Selway, Sarah Thompson, and Ross Turner (Apr. 2025). “Seismicity of Denman Glacier: Constraints on Geometry and Dynamics”. In: *EGU General Assembly Conference Abstracts*. Vol. 27. EGU25-5279, EGU25–5279.

Stål, Tobias, Anya M Reading, Matthew J Cracknell, Jörg Ebbing, Jacqueline A Halpin, Ian D Kelly, Emma J MacKie, Mohamed Sobh, Ross J Turner, and Joanne M Whittaker (Apr. 2023). “Using information entropy to optimise and communicate certainty of continental scale tectonic models”. In: *EGU General Assembly Conference Abstracts*. Vol. 25. EGU23-4074. Copernicus Meetings, EGU23–4074.