

# Dr. Anne Glerum

## Experience

- 2021–2024 **Postdoctoral researcher**, *Inorganic and isotope geochemistry* - GFZ Potsdam, Germany,  
- Model fluid flow and metal transport in coupled simulations of sediment-hosted Zn-Pb deposits.  
- Couple geodynamic ASPECT software to hydrothermal code CSMP++.  
- Identify favourable conditions for Zn-Pb deposits from geodynamic simulations of rifting.
- 2017–2021 **Postdoctoral researcher**, *Geodynamic modelling* - GFZ Potsdam, Germany,  
- Develop geodynamic ASPECT software for modeling continental rifting.  
- Demonstrate edge-driven microplate rotation in the East African Rift System.  
- Implement nonlinear visco-elasto-viscoplastic rheology in ASPECT.
- 2018–Present **Maintainer (since 2020) and Principal developer of the ASPECT software.**

## Education

- 2012–2017 **Doctoral researcher**, *Utrecht University*, The Netherlands.  
**Thesis:** [Geodynamics of complex plate boundary regions](#). Title awarded 01-03-2019.  
- Quantify geodynamic forcing of Mediterranean crustal deformation.  
- Model 2D and 3D thermo-mechanically coupled time-dependent and instantaneous subduction.  
- Implement viscoplasticity in ASPECT.
- 2009-2012 **MSc in Geophysics**, *Utrecht University*, The Netherlands, highest distinction.
- 2006-2009 **BSc in Earth Sciences**, *Utrecht University*, The Netherlands, highest distinction.

## Funded proposals

- 2024 **Geo.X Grow Your Idea Co-PI Exploring the geophysics of rocky planets**, Berlin-Brandenburg.
- 2024 **High-performance computing time on HRLN cluster**, Germany.  
[17051 kCoreh](#) and [31490 kCoreh](#).
- 2024 **SNSF Starting Grant collaborator**, *in review*, Switzerland.
- 2024 **ERC Starting Grant collaborator**, *in review*, EU.
- 2023 **DFG SPP 2238 DOME team member ROSE project**, Germany.
- 2023 **HORIZON MSCA doctoral network TALENTS team member**, EU.
- 2020-2023 **High-performance computing time on HRLN cluster**, Germany.  
**Monetary equivalent:** €260,000, €260,000, €1,300,000, and €732,000.
- 2019 **NSF collaborator (#1925595, \$1,000,000) and contributor (#1551864, \$399,047)**, USA.
- 2016 **HPC time on Dutch National Supercomputer Cartesius**, The Netherlands.

## Awards

- 2024 **EGU Geodynamics Division Outstanding Early Career Scientist Award**, EGU.
- 2020 **GFZ Award for Young Scientists**, *Awarded 2023*, GFZ Potsdam.
- 2019 **Geo.X international travel grant €500**, Germany.
- 2018 **2nd Prize Best poster €150**, *Dutch Earth Scientific Conference*, The Netherlands.

## Outreach & Community service

- Manuscript and proposal review** for Tectonophysics, GRL, Tectonics, Geology, GCubed and NSF
- 2022-2023 **Topic editor** for a [special issue](#) of *Frontiers in Earth Science*
- '18,'19,'21,'22 **EGU shortcourse Geodynamics 101**, *vEGU, EGU*, Austria.
- 2017–2021 **EGU Geodynamics blog editor and author.**

## Conferences and Workshops

- Invited talks Ada Lovelace workshop (2024), EGU (2024), [Rift and Rifted Margins Seminar](#) (2023), U. of Florida Geological Science Seminar (2022), DOME workshop (2022), EGU (2022), [Geophysics and Tectonics Seminar](#) (2021), MSC/SZ4D workshop (2021), AGU (2021), YES Conference (2019), AGU (2017)
- Organised Tectonics modeling Workshop (2020), Ada Lovelace (Nethermod, 2017), ASPECT short course at GeoMod (2014), ASPECT hackathons (2020-2024)
- Convened GeoBerlin (2023), AGU ('24 in review, '23, '21-'20) and Tectonics Community Science Workshop ('20)

## Supervision & Teaching

**Cosupervision** of 3 PhD students (Dr. M. Richter, Dr. D. Neuharth, E. Heckenbach), 4 MSc students (Dr. M. Fraters, C. Blom, E. Heckenbach, F. Gehrke) and **supervision** of 2 BSc students (R. Bölz, E. Mahlo).

'18-'20, '23 **Course instructor**, *University of Potsdam*, Potsdam, Germany.

2008-2016 **Practical instructor**, *Utrecht University*, Utrecht, The Netherlands.

## Selected publications

The full list of 20 published manuscripts can be found [here](#).

- in revision* **Glerum, A.**, S. Brune, J. M. Magnall, P. Weis, and S. Gleeson (*in revision*). "Geodynamic control on clastic-dominated metal deposits". *EGU Solid Earth*. DOI: [10.5194/egusphere-2023-2518](#).
- Zwaan, F., S. Brune, **Glerum, A.**, D. A. Vasey, J. B. Naliboff, G. Manatschal, and E. C. Gaucher (*in revision*). "Rift-inversion orogens are potential hotspots for natural H<sub>2</sub> generation". DOI: [10.21203/rs.3.rs-3367317/v1](#).
- 2024 Vasey, D. A., J. B. Naliboff, E. Cowgill, S. Brune, **Glerum, A.**, and F. Zwaan (2024). "Impact of rift history on the structural style of intracontinental rift-inversion orogens". *Geology*. DOI: [10.1130/G51489.1](#).
- 2023 Gernon, T. M. et al. (2023). "Rift-induced disruption of cratonic keels drives kimberlite volcanism". *Nature* 620, pp. 344–350. DOI: [10.1038/s41586-023-06193-3](#).
- 2022 Neuharth, D., S. Brune, T. Wrona, **Glerum, A.**, J. Braun, and X. Yuan (2022). "Evolution of rift systems and their fault networks in response to surface processes". *Tectonics* 41.e2021TC007166. DOI: [10.1029/2021TC007166](#).
- Zelst, I. van, F. Cramer, A. Pusok, **Glerum, A.**, J. Dannberg, and C. Thieulot (2022). "101 Geodynamic modelling: How to design, carry out, and interpret numerical studies". *Solid Earth* 13, pp. 583–637. DOI: [10.5194/se-13-583-2022](#).
- 2021 Heckenbach, E. L., S. Brune, **Glerum, A. C.**, and J. Bott (2021). "Is there a speed limit for the thermal steady-state assumption in continental rifts?" *GCubed* 22.3. ISSN: 1525-2027. DOI: [10.1029/2020GC009577](#).
- 2020 **Glerum, A.**, S. Brune, D. S. Stamps, and M. R. Strecker (2020). "Victoria continental microplate dynamics controlled by the lithospheric strength distribution of the East African Rift". *Nat. Commun.* 11.1, p. 2881. DOI: [10.1038/s41467-020-16176-x](#).
- Naliboff, J. B., **Glerum, A.**, S. Brune, G. Péron-Pinvidic, and T. Wrona (2020). "Development of 3-D rift heterogeneity through fault network evolution". *GRL* 47.13. DOI: [10.1029/2019GL086611](#).
- 2019 Fraters, M. R.T., W. Bangerth, C. Thieulot, **Glerum, A.**, and W. Spakman (2019). "Efficient and practical Newton solvers for non-linear Stokes systems in geodynamic problems". *GJI* 218.2, pp. 873–894. DOI: [10.1093/gji/ggz183](#).
- 2018 **Glerum, A.**, C. Thieulot, M. Fraters, C. Blom, and W. Spakman (2018). "Nonlinear viscoplasticity in ASPECT: benchmarking and applications to subduction". *Solid Earth* 9, pp. 267–294. DOI: [10.5194/se-9-267-2018](#).