

## Publications for Dietmar Muller

### 2018

Barnett-Moore, N., Muller, D., Williams, S., Skogseid, J., Seton, M. (2018). A reconstruction of the North Atlantic since the earliest Jurassic. *Basin Research*, 30(Suppl 1), 160-185. <a href="http://dx.doi.org/10.1111/bre.12214">[More Information]</a>

Muller, R., Matthews, K., Sandwell, D. (2018). Advances in Imaging Small-Scale Seafloor and Sub-Seafloor Tectonic Fabric Using Satellite Altimetry. In Detlef Stammer, Anny Cazenave (Eds.), *Satellite Altimetry Over Oceans and Land Surfaces*, (pp. 523-546). Australia: CRC Press.

Muller, R., Hassan, R., Gurnis, M., Flament, N., Williams, S. (2018). Dynamic topography of passive continental margins and their hinterlands since the Cretaceous. *Gondwana Research*, 53 (2018), 225-251. <a href="http://dx.doi.org/10.1016/j.gr.2017.04.028">[More Information]</a>

Muller, R., Dutkiewicz, A. (2018). Oceanic crustal carbon cycle drives 26-million-year atmospheric carbon dioxide periodicities. *Science Advances*, Vol. 4, no. 2, eaaq0500, 1-7. <a href="http://dx.doi.org/10.1126/sciadv.aaq0500">[More Information]</a>

### 2017

Merdith, A., Collins, A., Williams, S., Pisarevsky, S., Foden, J., Archibald, D., Blades, M., Alessio, B., Armistead, S., Plavska, D., Muller, R., et al (2017). A full-plate global reconstruction of the Neoproterozoic. *Gondwana Research*, 50, 84-134. <a href="http://dx.doi.org/10.1016/j.gr.2017.04.001">[More Information]</a>

Macleod, S., Williams, S., Matthews, K., Muller, R., Qin, X. (2017). A global review and digital database of large-scale extinct spreading centers. *Geosphere*, 13(3), 911-949. <a href="http://dx.doi.org/10.1130/GES01379.1">[More Information]</a>

Gion, A., Williams, S., Muller, R. (2017). A reconstruction of the Eureka Orogeny incorporating deformation constraints. *Tectonics*, 36(2), 304-320. <a href="http://dx.doi.org/10.1002/2015TC004094">[More Information]</a>

Flament, N., Williams, S., Muller, R., Gurnis, M., Bower, D. (2017). Correspondence: Reply to 'Numerical modelling of the PERM anomaly and the Emeishan large igneous province'. *Nature Communications*, 8(1), 1-4. <a href="http://dx.doi.org/10.1038/s41467-017-00130-5">[More Information]</a>

Barnett-Moore, N., Hassan, R., Muller, R., Williams, S., Flament, N. (2017). Dynamic topography and eustasy controlled the paleogeographic evolution of northern Africa since the mid-Cretaceous. *Tectonics*, 36(5), 929-944. <a href="http://dx.doi.org/10.1002/2016TC004280">[More Information]</a>

Dyksterhuis, S., Muller, R. (2017). Future intraplate stress and the longevity of carbon storage. *Fuel*, 200, 31-36. <a href="http://dx.doi.org/10.1016/j.fuel.2017.03.042">[More Information]</a>

Rubey, M., Brune, S., Heine, C., Davies, D., Williams, S.,

Muller, R. (2017). Global patterns in Earth's dynamic topography since the Jurassic: The role of subducted slabs. *Solid Earth*, 8(5), 899-919. <a href="http://dx.doi.org/10.5194/se-8-899-2017">[More Information]</a>

Cao, W., Zahirovic, S., Flament, N., Williams, S., Golonka, J., Muller, R. (2017). Improving global paleogeography since the late Paleozoic using paleobiology. *Biogeosciences*, 14(23), 5425-5439. <a href="http://dx.doi.org/10.5194/bg-14-5425-2017">[More Information]</a>

Salles, T., Flament, N., Muller, R. (2017). Influence of mantle flow on the drainage of eastern Australia since the Jurassic Period. *Geochemistry, Geophysics, Geosystems*, 18(1), 280-305. <a href="http://dx.doi.org/10.1002/2016GC006617">[More Information]</a>

Merdith, A., Williams, S., Muller, R., Collins, A. (2017). Kinematic constraints on the Rodinia to Gondwana transition. *Precambrian Research*, 299, 132-150. <a href="http://dx.doi.org/10.1016/j.precamres.2017.07.013">[More Information]</a>

Yang, T., Moresi, L., Muller, R., Gurnis, M. (2017). Oceanic Residual Topography Agrees With Mantle Flow Predictions at Long Wavelengths. *Geophysical Research Letters*, 44(21), 10,896-10,906. <a href="http://dx.doi.org/10.1002/2017GL074800">[More Information]</a>

Flament, N., Williams, S., Muller, R., Gurnis, M., Bower, D. (2017). Origin and evolution of the deep thermochemical structure beneath Eurasia. *Nature Communications*, 8, 1-9. <a href="http://dx.doi.org/10.1038/ncomms14164">[More Information]</a>

Brune, S., Williams, S., Muller, R. (2017). Potential links between continental rifting, CO<sub>2</sub> degassing and climate change through time. *Nature Geoscience*, 10, 941-946. <a href="http://dx.doi.org/10.1038/s41561-017-0003-6">[More Information]</a>

Brune, S., Williams, S., Muller, R. (2017). Potential links between continental rifting, CO<sub>2</sub> degassing and climate change through time. *Nature Geoscience*, 10(12), 941-946. <a href="http://dx.doi.org/10.1038/s41561-017-0003-6">[More Information]</a>

Dutkiewicz, A., Muller, R., Wang, X., O'Callaghan, S., Cannon, J., Wright, N. (2017). Predicting Sediment Thickness on Vanished Ocean Crust Since 200 Ma. *Geochemistry, Geophysics, Geosystems*, 18(12), 4586-4603. <a href="http://dx.doi.org/10.1002/2017GC007258">[More Information]</a>

Barnett-Moore, N., Hassan, R., Flament, N., Muller, R. (2017). The deep Earth origin of the Iceland plume and its effects on regional surface uplift and subsidence. *Solid Earth*, 8(1), 235-254. <a href="http://dx.doi.org/10.5194/se-8-235-2017">[More Information]</a>

Harrington, L., Zahirovic, S., Flament, N., Muller, R. (2017). The role of deep Earth dynamics in driving the flooding and emergence of New Guinea since the Jurassic. *Earth and Planetary Science Letters*, 479, 273-283. <a href="http://dx.doi.org/10.1016/j.epsl.2017.09.039">[More Information]</a>

Harrington, L., Zahirovic, S., Flament, N., Muller, R. (2017). The role of deep Earth dynamics in driving the flooding and emergence of New Guinea since the Jurassic. *Earth and Planetary Science Letters*, 479, 273-283. <a href="http://dx.doi.org/10.1016/j.epsl.2017.09.039">[More Information]</a>

## 2016

Hassan, R., Muller, R., Gurnis, M., Williams, S., Flament, N. (2016). A rapid burst in hotspot motion through the interaction of tectonics and deep mantle flow. *Nature*, 533, 239-242. <a href="http://dx.doi.org/10.1038/nature17422">[More Information]</a>

Brune, S., Williams, S., Butterworth, N., Muller, R. (2016). Abrupt plate accelerations shape rifted continental margins. *Nature*, 536(7615), 201-204. <a href="http://dx.doi.org/10.1038/nature18319">[More Information]</a>

Williams, S., Flament, N., Muller, R. (2016). Alignment between seafloor spreading directions and absolute plate motions through time. *Geophysical Research Letters*, 43(4), 1472-1480. <a href="http://dx.doi.org/10.1002/2015GL067155">[More Information]</a>

Dutkiewicz, A., O'Callaghan, S., Muller, R. (2016). Controls on the distribution of deep-sea sediments. *Geochemistry, Geophysics, Geosystems*, 17(8), 3075-3098. <a href="http://dx.doi.org/10.1002/2016GC006428">[More Information]</a>

Muller, R., Flament, N., Matthews, K., Williams, S., Gurnis, M. (2016). Formation of Australian continental margin highlands driven by plate-mantle interaction. *Earth and Planetary Science Letters*, 441, 60-70. <a href="http://dx.doi.org/10.1016/j.epsl.2016.02.025">[More Information]</a>

Matthews, K., Maloney, K., Zahirovic, S., Williams, S., Seton, M., Muller, R. (2016). Global plate boundary evolution and kinematics since the late Paleozoic. *Global and Planetary Change*, 146, 226-250. <a href="http://dx.doi.org/10.1016/j.gloplacha.2016.10.002">[More Information]</a>

Zahirovic, S., Flament, N., Muller, R., Seton, M., Gurnis, M. (2016). Large fluctuations of shallow seas in low-lying Southeast Asia driven by mantle flow. *Geochemistry, Geophysics, Geosystems*, 17(9), 3589-3607. <a href="http://dx.doi.org/10.1002/2016GC006434">[More Information]</a>

Muller, R., Seton, M., Zahirovic, S., Williams, S., Matthews, K., Wright, N., Shephard, G., Maloney, K., Barnett-Moore, N., Hosseinpour, M., Cannon, J., et al (2016). Ocean Basin Evolution and Global-Scale Plate Reorganization Events since Pangea Breakup. *Annual Reviews of Earth and Planetary Science*, 44, 107-138. <a href="http://dx.doi.org/10.1146/annurev-earth-060115-012211">[More Information]</a>

Matthews, K., Muller, R., Sandwell, D. (2016). Oceanic microplate formation records the onset of India-Eurasia collision. *Earth and Planetary Science Letters*, 433, 204-214. <a href="http://dx.doi.org/10.1016/j.epsl.2015.10.040">[More Information]</a>

Wessel, P., Muller, R. (2016). Ridge-spotting: A new test for Pacific absolute plate motion models. *Geochemistry, Geophysics, Geosystems*, 17(6), 2408-2420. <a href="http://dx.doi.org/10.1002/2016GC006404">[More Information]</a>

Mallard, C., Coltice, N., Seton, M., Muller, R., Tackley, P. (2016). Subduction controls the distribution and fragmentation of Earth's tectonic plates. *Nature*, 535(7610), 140-143. <a href="http://dx.doi.org/10.1038/nature17992">[More Information]</a>

Butterworth, N., Steinberg, D., Muller, R., Williams, S., Merdith, A., Hardy, S. (2016). Tectonic environments of South American porphyry copper magmatism through time revealed by spatiotemporal data mining. *Tectonics*, 35(12), 2847-2862. <a href="http://dx.doi.org/10.1002/2016TC004289">[More Information]</a>

Zahirovic, S., Matthews, K., Flament, N., Muller, R., Hill, K., Seton, M., Gurnis, M. (2016). Tectonic evolution and deep mantle structure of the eastern Tethys since the latest Jurassic. *Earth-Science Reviews*, 162, 293-337. <a href="http://dx.doi.org/10.1016/j.earscirev.2016.09.005">[More Information]</a>

Hosseinpour, M., Williams, S., Seton, M., Barnett-Moore, N., Muller, R. (2016). Tectonic evolution of Western Tethys from Jurassic to present day: coupling geological and geophysical data with seismic tomography models. *International Geology Review*, 58(13), 1616-1645. <a href="http://dx.doi.org/10.1080/00206814.2016.1183146">[More Information]</a>

Muller, R., Qin, X., Sandwell, D., Dutkiewicz, A., Williams, S., Flament, N., Maus, S., Seton, M. (2016). The GPlates Portal: Cloud-Based Interactive 3D Visualization of Global Geophysical and Geological Data in a Web Browser. *PloS One*, 11(3), 1-17. <a href="http://dx.doi.org/10.1371/journal.pone.0150883">[More Information]</a>

Wright, N., Seton, M., Williams, S., Muller, R. (2016). The Late Cretaceous to recent tectonic history of the Pacific Ocean basin. *Earth-Science Reviews*, 154, 138-173. <a href="http://dx.doi.org/10.1016/j.earscirev.2015.11.015">[More Information]</a>

Dutkiewicz, A., Muller, R., Hogg, A., Spence, P. (2016). Vigorous deep-sea currents cause global anomaly in sediment accumulation in the Southern Ocean. *Geology*, 44(8), 663-666. <a href="http://dx.doi.org/10.1130/G38143.1">[More Information]</a>

## 2015

Gibbons, A., Zahirovic, S., Muller, R., Whittaker, J., Yatheesh, V. (2015). A tectonic model reconciling evidence for the collisions between India, Eurasia and intra-oceanic arcs of the central-eastern Tethys. *Gondwana Research*, 28(2), 451-492. <a href="http://dx.doi.org/10.1016/j.gr.2015.01.001">[More Information]</a>

Maher, S., Wessel, P., Muller, R., Williams, S., Harada, Y. (2015). Absolute plate motion of Africa around Hawaii-Emperor bend time. *Geophysical Journal International*, 201(3), 1743-1764. <a href="http://dx.doi.org/10.1093/gji/ggv104">[More Information]</a>

Williams, S., Flament, N., Muller, R., Butterworth, N. (2015). Absolute plate motions since 130 Ma constrained by subduction zone kinematics. *Earth and Planetary Science Letters*, 418, 66-77. <a href="http://dx.doi.org/10.1016/j.epsl.2015.02.026">[More Information]</a>

Bello, L., Coltice, N., Tackley, P., Muller, R., Cannon, J. (2015). Assessing the role of slab rheology in coupled plate-mantle convection models. *Earth and Planetary Science Letters*, 430, 191-201. <a href="http://dx.doi.org/10.1016/j.epsl.2015.02.026">[More Information]</a>

<http://dx.doi.org/10.1016/j.epsl.2015.08.010>>[More Information]</a>

Dutkiewicz, A., Muller, R., O'Connell, C., Callaghan, S., Jonasson, H. (2015). Census of seafloor sediments in the world's ocean. *Geology*, 43(9), 795-798. <a href="http://dx.doi.org/10.1130/G36883.1">http://dx.doi.org/10.1130/G36883.1>[More Information]</a>

O'Connor, J., Hoernle, K., Muller, R., Morgan, J., Butterworth, N., Hauff, F., Sandwell, D., Jokat, W., Wijbrans, J., Stoffers, P. (2015). Deformation-related volcanism in the Pacific Ocean linked to the Hawaiian-Emperor bend. *Nature Geoscience*, 8, 393-397. <a href="http://dx.doi.org/10.1038/NGEO2416">http://dx.doi.org/10.1038/NGEO2416>[More Information]</a>

Heine, C., Yeo, L., Muller, R. (2015). Evaluating global paleoshoreline models for the Cretaceous and Cenozoic. *Australian Journal of Earth Sciences*, 62(3), 275-287. <a href="http://dx.doi.org/10.1080/08120099.2015.1018321">http://dx.doi.org/10.1080/08120099.2015.1018321>[More Information]</a>

Bai, Y., Wu, S., Liu, Z., Muller, R., Williams, S., Zahirovic, S., Dong, D. (2015). Full-fit reconstruction of the South China Sea conjugate margins. *Tectonophysics*, 661, 121-135. <a href="http://dx.doi.org/10.1016/j.tecto.2015.08.028">http://dx.doi.org/10.1016/j.tecto.2015.08.028>[More Information]</a>

Matthews, K., Williams, S., Whittaker, J., Muller, R., Seton, M., Clarke, G. (2015). Geologic and kinematic constraints on Late Cretaceous to mid Eocene plate boundaries in the southwest Pacific. *Earth-Science Reviews*, 140(1), 72-107. <a href="http://dx.doi.org/10.1016/j.earscirev.2014.10.008">http://dx.doi.org/10.1016/j.earscirev.2014.10.008>[More Information]</a>

Flament, N., Gurnis, M., Muller, R., Bower, D., Husson, L. (2015). Influence of subduction history on South American topography. *Earth and Planetary Science Letters*, 430, 9-18. <a href="http://dx.doi.org/10.1016/j.epsl.2015.08.006">http://dx.doi.org/10.1016/j.epsl.2015.08.006>[More Information]</a>

Whittaker, J., Afonso, J., Masterton, S., Muller, R., Wessel, P., Williams, S., Seton, M. (2015). Long-term interaction between mid-ocean ridges and mantle plumes. *Nature Geoscience*, 8(6), 479-483. <a href="http://dx.doi.org/10.1038/NGEO2437">http://dx.doi.org/10.1038/NGEO2437>[More Information]</a>

Muller, R., Seton, M. (2015). Paleophysiology of Ocean Basins. In Harff, J., Meschede, M., Petersen, S., Thiede, J. (Eds.), *Encyclopedia of Marine Geosciences*, (pp. 638-648). Netherlands: Springer Netherlands. <a href="http://dx.doi.org/10.1007/978-94-007-6644-0\_84-1">http://dx.doi.org/10.1007/978-94-007-6644-0\_84-1>[More Information]</a>

Merdith, A., Landgrebe, T., Muller, R. (2015). Prospectivity of Western Australian iron ore from geophysical data using a reject option classifier. *Ore Geology Reviews*, 71, 761-776. <a href="http://dx.doi.org/10.1016/j.oregeorev.2015.03.014">http://dx.doi.org/10.1016/j.oregeorev.2015.03.014>[More Information]</a>

Hassan, R., Flament, N., Gurnis, M., Bower, D., Muller, R. (2015). Provenance of plumes in global convection models. *Geochemistry, Geophysics, Geosystems*, 16(5), 1465-1489. <a href="http://dx.doi.org/10.1002/2015GC005751">http://dx.doi.org/10.1002/2015GC005751>[More Information]</a>

Wright, N., Muller, R., Seton, M., Williams, S. (2015). Revision of Paleogene plate motions in the Pacific and implications for the Hawaiian-Emperor bend. *Geology*, 43(5), 455-458. <a href="http://dx.doi.org/10.1130/G36303.1">http://dx.doi.org/10.1130/G36303.1>[More Information]</a>

Seton, M., Flament, N., Whittaker, J., Muller, R., Gurnis, M., Bower, D. (2015). Ridge subduction sparked reorganization of

the Pacific plate-mantle system 60-50 million years ago. *Geophysical Research Letters*, 42(6), 1732-1740. <a href="http://dx.doi.org/10.1002/2015GL063057">http://dx.doi.org/10.1002/2015GL063057>[More Information]</a>

Wessel, P., Matthews, K., Muller, R., Mazzoni, A., Whittaker, J., Myhill, R., Chandler, M. (2015). Semiautomatic fracture zone tracking. *Geochemistry, Geophysics, Geosystems*, 16(7), 2462-2472. <a href="http://dx.doi.org/10.1002/2015GC005853">http://dx.doi.org/10.1002/2015GC005853>[More Information]</a>

Zahirovic, S., Muller, R., Seton, M., Flament, N. (2015). Tectonic speed limits from plate kinematic reconstructions. *Earth and Planetary Science Letters*, 418, 40-52. <a href="http://dx.doi.org/10.1016/j.epsl.2015.02.037">http://dx.doi.org/10.1016/j.epsl.2015.02.037>[More Information]</a>

Muller, R., Yatheesh, V., Shuhail, M. (2015). The tectonic stress field of India since the Oligocene. *Gondwana Research*, 28, 612-624. <a href="http://dx.doi.org/10.1016/j.gr.2014.05.008">http://dx.doi.org/10.1016/j.gr.2014.05.008>[More Information]</a>

Landgrebe, T., Muller, R. (2015). Uncovering the relationship between subducting bathymetric ridges and volcanic chains with significant earthquakes using geophysical data mining. *Australian Journal of Earth Sciences*, 62(2), 171-180. <a href="http://dx.doi.org/10.1080/08120099.2015.1003145">http://dx.doi.org/10.1080/08120099.2015.1003145>[More Information]</a>

## 2014

Herold, N., Buzan, J., Seton, M., Goldner, A., Green, J., Muller, R., Markwick, P., Huber, M. (2014). A suite of Early Eocene (~55 Ma) climate model boundary conditions. *Geoscientific Model Development*, 7(5), 2077-2090. <a href="http://dx.doi.org/10.5194/gmd-7-2077-2014">http://dx.doi.org/10.5194/gmd-7-2077-2014>[More Information]</a>

Barnett-Moore, N., Flament, N., Heine, C., Butterworth, N., Muller, R. (2014). Cenozoic uplift of south Western Australia as constrained by river profiles. *Tectonophysics*, 622, 186-197. <a href="http://dx.doi.org/10.1016/j.tecto.2014.03.010">http://dx.doi.org/10.1016/j.tecto.2014.03.010>[More Information]</a>

Shephard, G., Flament, N., Williams, S., Seton, M., Gurnis, M., Muller, R. (2014). Circum-Arctic mantle structure and long-wavelength topography since the Jurassic. *Journal of Geophysical Research: Solid Earth*, 119, 7889-7908. <a href="http://dx.doi.org/10.1002/2014JB011078">http://dx.doi.org/10.1002/2014JB011078>[More Information]</a>

Seton, M., Whittaker, J., Wessel, P., Muller, R., DeMets, C., Merkouriev, S., Cande, S., Gaina, C., Eagles, G., Granot, R., Wright, N., Williams, S., et al (2014). Community infrastructure and repository for marine magnetic identifications. *Geochemistry, Geophysics, Geosystems*, 15, 1629-1641. <a href="http://dx.doi.org/10.1002/2013GC005176">http://dx.doi.org/10.1002/2013GC005176>[More Information]</a>

Butterworth, N., Talsma, A., Muller, R., Seton, M., Bunge, H., Schuberth, B., Shephard, G., Heine, C. (2014). Geological, tomographic, kinematic and geodynamic constraints on the dynamics of sinking slabs. *Journal of Geodynamics*, 73, 1-13. <a href="http://dx.doi.org/10.1016/j.jog.2013.10.006">http://dx.doi.org/10.1016/j.jog.2013.10.006>[More Information]</a>

Bai, Y., Williams, S., Muller, R., Liu, Z., Hosseinpour, M. (2014). Mapping crustal thickness using gravity data: Methods and uncertainties. *Geophysics*, 79(2), G27-G36. <a href="http://dx.doi.org/10.1190/geo2013-0270.1">http://dx.doi.org/10.1190/geo2013-0270.1>[More Information]</a>

- Sandwell, D., Muller, R., Smith, W., Garcia, E., Francis, R. (2014). New global marine gravity model from Cryo-Sat-2 and Jason-1 reveals buried tectonic structure. *Science*, 346(6205), 65-67. <a href="http://dx.doi.org/10.1126/science.1258213">[More Information]</a>
- Muller, R., Rey, P., Moresi, L., Mondy, L., Duclaux, G., Salles, T., Rawling, T., Elders, C. (2014). Next generation modelling of rift basins and continental margins. *Geological Society of Australia, 2014 Australian Earth Sciences Convention (AESC)*, Sydney: Geological Society of Australia.
- Butterworth, N., Muller, R., Quevedo, L., O'Connor, J., Hoernle, K., Morra, G. (2014). Pacific plate slab pull and intraplate deformation in the early Cenozoic. *Solid Earth*, 5(2), 757-777. <a href="http://dx.doi.org/10.5194/se-5-757-2014">[More Information]</a>
- Muller, R., Seton, M. (2014). Plate Motion. In Harff, J., Meschede, M., Petersen, S., Thiede, J. (Eds.), *Encyclopedia of Marine Geosciences*, (pp. 669-676). Netherlands: Springer Netherlands. <a href="http://dx.doi.org/10.1007/978-94-007-6644-0\_131-1">[More Information]</a>
- Cannon, J., Lau, E., Muller, R. (2014). Plate tectonic raster reconstruction in GPlates. *Solid Earth*, 5(2), 741-755. <a href="http://dx.doi.org/10.5194/se-5-741-2014">[More Information]</a>
- Muller, R., Dutkiewicz, A., Seton, M., Gaina, C. (2014). Seawater chemistry driven by supercontinent assembly, breakup and dispersal: REPLY. *Geology*, 42(5), E335-E335. <a href="http://dx.doi.org/10.1130/G35636Y.1">[More Information]</a>
- Zahirovic, S., Seton, M., Muller, R. (2014). The Cretaceous and Cenozoic tectonic evolution of Southeast Asia. *Solid Earth*, 5(1), 227-273. <a href="http://dx.doi.org/10.5194/se-5-227-2014">[More Information]</a>
- Flament, N., Gurnis, M., Williams, S., Seton, M., Skogseid, J., Heine, C., Muller, R. (2014). Topographic asymmetry of the South Atlantic from global models of mantle flow and lithospheric stretching. *Earth and Planetary Science Letters*, 387, 107-119. <a href="http://dx.doi.org/10.1016/j.epsl.2013.11.017">[More Information]</a>
- 2013**
- Flament, N., Gurnis, M., Muller, R. (2013). A review of observations and models of dynamic topography. *Lithosphere*, 5(2), 189-210. <a href="http://dx.doi.org/10.1130/L245.1">[More Information]</a>
- Coltice, N., Seton, M., Rolf, T., Muller, R., Tackley, P. (2013). Convergence in tectonic reconstructions and mantle convection models for significant fluctuations in seafloor spreading. *Earth and Planetary Science Letters*, 383, 92-100. <a href="http://dx.doi.org/10.1016/j.epsl.2013.09.032">[More Information]</a>
- Williams, S., Whittaker, J., Granot, R., Muller, R. (2013). Early India-Australia spreading history revealed by newly detected Mesozoic magnetic anomalies in the Perth Abyssal Plain. *Journal of Geophysical Research: Solid Earth*, 118(7), 3275-3284. <a href="http://dx.doi.org/10.1002/jgrb.50239">[More Information]</a>
- Masterton, S., Gubbins, D., Muller, R., Singh, K. (2013). Forward modelling of oceanic lithospheric magnetisation. *Geophysical Journal International*, 192(3), 951-962. <a href="http://dx.doi.org/10.1093/gji/ggs063">[More Information]</a>
- Hosseinpour, M., Muller, R., Williams, S., Whittaker, J. (2013). Full-fit reconstruction of the Labrador Sea and Baffin Bay. *Solid Earth*, 4(2), 461-479. <a href="http://dx.doi.org/10.5194/se-4-461-2013">[More Information]</a>
- Whittaker, J., Goncharov, A., Williams, S., Muller, R., Leitchenkov, G. (2013). Global sediment thickness data set updated for the Australian-Antarctic Southern Ocean. *Geochemistry, Geophysics, Geosystems*, 14(8), 3297-3305. <a href="http://dx.doi.org/10.1002/ggge.20181">[More Information]</a>
- Heine, C., Zoethout, J., Muller, R. (2013). Kinematics of the South Atlantic rift. *Solid Earth*, 4(2), 215-253. <a href="http://dx.doi.org/10.5194/se-4-215-2013">[More Information]</a>
- Williams, S., Whittaker, J., Muller, R. (2013). Newly-recognised Continental Fragments Rifted from the West Australian Margin. *WABS 2013: West Australian Basins Symposium*, Perth, Australia: Petroleum Exploration Society of Australia Limited.
- Quevedo, L., Hansra, B., Morra, G., Butterworth, N., Muller, R. (2013). Oblique mid ocean ridge subduction modelling with the parallel fast multipole boundary element method. *Computational Mechanics*, 51, 455-463. <a href="http://dx.doi.org/10.1007/s00466-012-0751-5">[More Information]</a>
- Morra, G., Seton, M., Quevedo, L., Muller, R. (2013). Organization of the tectonic plates in the last 200 Myr. *Earth and Planetary Science Letters*, 373, 93-101. <a href="http://dx.doi.org/10.1016/j.epsl.2013.04.020">[More Information]</a>
- Landgrebe, T., Merdith, A., Dutkiewicz, A., Muller, R. (2013). Relationships between palaeogeography and opal occurrence in Australia: A data-mining approach. *Computers and Geosciences*, 56, 76-82. <a href="http://dx.doi.org/10.1016/j.cageo.2013.02.002">[More Information]</a>
- Whittaker, J., Williams, S., Muller, R. (2013). Revised tectonic evolution of the Eastern Indian Ocean. *Geochemistry, Geophysics, Geosystems*, 14(6), 1891-1909. <a href="http://dx.doi.org/10.1002/ggge.20120">[More Information]</a>
- Muller, R., Dutkiewicz, A., Seton, M., Gaina, C. (2013). Seawater chemistry driven by supercontinent assembly, breakup, and dispersal. *Geology*, 41(8), 907-910. <a href="http://dx.doi.org/10.1130/G34405.1">[More Information]</a>
- Hall, L., Gibbons, A., Bernardel, G., Whittaker, J., Nicholson, C., Rollet, N., Muller, R. (2013). Structural Architecture of Australia's Southwest Continental Margin and Implications for Early Cretaceous Basin Evolution. *WABS 2013: West Australian Basins Symposium*, Perth, Australia: Petroleum Exploration Society of Australia Limited.
- Whittaker, J., Halpin, J., Williams, S., Hall, L., Gardner, R., Kobler, M., Daczko, N., Muller, R. (2013). Tectonic Evolution and Continental Fragmentation of the Southern West Australian Margin. *WABS 2013: West Australian Basins Symposium*, Perth, Australia: Petroleum Exploration Society of Australia Limited.
- Gibbons, A., Whittaker, J., Muller, R. (2013). The breakup of East Gondwana: Assimilating constraints from Cretaceous ocean basins around India into a best-fit tectonic model. *Journal of Geophysical Research: Solid Earth*, 118(3), 808-822. <a href="http://dx.doi.org/10.1002/jgrb.50079">[More Information]</a>

Information]</a>

Mjelde, R., Goncharov, A., Muller, R. (2013). The Moho: Boundary above upper mantle peridotites or lower crustal eclogites? A global review and new interpretations for passive margins. *Tectonophysics*, 609, 636-650. <a href="http://dx.doi.org/10.1016/j.tecto.2012.03.001">[More Information]</a>

Shephard, G., Muller, R., Seton, M. (2013). The tectonic evolution of the Arctic since Pangea breakup: Integrating constraints from surface geology and geophysics with mantle structure. *Earth-Science Reviews*, 124, 148-183. <a href="http://dx.doi.org/10.1016/j.earscirev.2013.05.012">[More Information]</a>

Merdith, A., Landgrebe, T., Dutkiewicz, A., Muller, R. (2013). Towards a predictive model for opal exploration using a spatio-temporal data mining approach. *Australian Journal of Earth Sciences*, 60(2), 217-229. <a href="http://dx.doi.org/10.1080/08120099.2012.754793">[More Information]</a>

## 2012

Matthews, K., Seton, M., Muller, R. (2012). A global-scale plate reorganization event at 105-100 Ma. *Earth and Planetary Science Letters*, 355-356, 283-298. <a href="http://dx.doi.org/10.1016/j.epsl.2012.08.023">[More Information]</a>

Williams, S., Muller, R., Landgrebe, T., Whittaker, J. (2012). An open-source software environment for visualizing and refining plate tectonic reconstructions using high-resolution geological and geophysical data sets. *GSA Today*, 22(4-5), 4-9. <a href="http://dx.doi.org/10.1130/GSATG139A.1">[More Information]</a>

Muller, R., Dyksterhuis, S., Rey, P. (2012). Australian paleo-stress fields and tectonic reactivation over the past 100 Ma. *Australian Journal of Earth Sciences*, 59(1), 13-28. <a href="http://dx.doi.org/10.1080/08120099.2011.605801">[More Information]</a>

Gibbons, A., Barckhausen, U., van den Bogaard, P., Hoernle, K., Werner, R., Whittaker, J., Muller, R. (2012). Constraining the Jurassic extent of Greater India: Tectonic evolution of the West Australian margin. *Geochemistry, Geophysics, Geosystems*, 13(5), 1-25. <a href="http://dx.doi.org/10.1029/2011GC003919">[More Information]</a>

Shephard, G., Liu, L., Muller, R., Gurnis, M. (2012). Dynamic topography and anomalously negative residual depth of the Argentine Basin. *Gondwana Research*, 22(2), 658-663. <a href="http://dx.doi.org/10.1016/j.gr.2011.12.005">[More Information]</a>

Greenwood, D., Herold, N., Huber, M., Muller, R., Seton, M. (2012). Early to middle Miocene monsoon climate in Australia. *Geology*, 40(6), e274-e274. <a href="http://dx.doi.org/10.1130/G33384Y.1">[More Information]</a>

Williams, S., Whittaker, J., Muller, R. (2012). Full-fit reconstructions of the southern Australian Margin and Antarctica - implications for correlating geology between Australia and Antarctica. *Eastern Australasian Basins Symposium IV*, Crows Nest, NSW: Conference Action Pty Ltd.

Seton, M., Muller, R., Zahirovic, S., Gaina, C., Torsvik, T., Shephard, G., Talsma, A., Gurnis, M., Turner, M., Maus, S., et al (2012). Global continental and ocean basin reconstructions since 200 Ma. *Earth-Science Reviews*, 113(3-4), 212-270. <a href="http://dx.doi.org/10.1016/j.earscirev.2012.03.002">[More Information]</a>

Quevedo, L., Morra, G., Muller, R. (2012). Global paleo-lithospheric models for geodynamical analysis of plate reconstructions. *Physics of the Earth and Planetary Interiors*, 212-213, 106-113. <a href="http://dx.doi.org/10.1016/j.pepi.2012.09.007">[More Information]</a>

Butterworth, N., Quevedo, L., Morra, G., Muller, R. (2012). Influence of overriding plate geometry and rheology on subduction. *Geochemistry, Geophysics, Geosystems*, 13(6), 1-15. <a href="http://dx.doi.org/10.1029/2011GC003968">[More Information]</a>

Zahirovic, S., Muller, R., Seton, M., Flament, N., Gurnis, M., Whittaker, J. (2012). Insights on the kinematics of the India-Eurasia collision from global geodynamic models. *Geochemistry, Geophysics, Geosystems*, 13(4), 1-25. <a href="http://dx.doi.org/10.1029/2011GC003883">[More Information]</a>

Herold, N., Huber, M., Muller, R., Seton, M. (2012). Modeling the Miocene climatic optimum: Ocean Circulation. *Paleoceanography*, 27(1), 1-22. <a href="http://dx.doi.org/10.1029/2010PA002041">[More Information]</a>

Gurnis, M., Turner, M., Zahirovic, S., DiCaprio, L., Spasojevic, S., Muller, R., Boyden, J., Seton, M., Manea, V., Bower, D. (2012). Plate Tectonic Reconstructions with Continuously Closing Plates. *Computers and Geosciences*, 38(1), 35-42. <a href="http://dx.doi.org/10.1016/j.cageo.2011.04.014">[More Information]</a>

McFadden, P., Barnicoat, A., Blewett, R., Collett, D., Collins, B., Dransfield, M., Fitzgerald, D., Haydon, B., Hough, R., Hronsky, J., Muller, R., et al (2012). *Searching the Deep Earth: A Vision for exploration geoscience in Australia*, (pp. 2 - 41). Canberra, Australia: Australian Academy of Science.

Morra, G., Quevedo, L., Muller, R. (2012). Spherical dynamic models of top-down tectonics. *Geochemistry, Geophysics, Geosystems*, 13(3), 1-29. <a href="http://dx.doi.org/10.1029/2011GC003843">[More Information]</a>

Shephard, G., Bunge, H., Schubert, B., Muller, R., Talsma, A., Moder, C., Landgrebe, T. (2012). Testing absolute plate reference frames and the implications for the generation of geodynamic mantle heterogeneity structure. *Earth and Planetary Science Letters*, 317-318, 204-217. <a href="http://dx.doi.org/10.1016/j.epsl.2011.11.027">[More Information]</a>

Qin, X., Muller, R., Cannon, J., Landgrebe, T., Heine, C., Watson, R., Turner, M. (2012). The GPlates Geological Information Model and Markup Language. *Geoscientific Instrumentation, Methods and Data Systems*, 1, 111-134. <a href="http://dx.doi.org/10.5194/gi-1-111-2012">[More Information]</a>

Muller, R., Landgrebe, T. (2012). The link between great earthquakes and the subduction of oceanic fracture zones. *Solid Earth*, 3, 447-465. <a href="http://dx.doi.org/10.5194/se-3-447-2012">[More Information]</a>

## 2011

Matthews, K., Hale, A., Gurnis, M., Muller, R., DiCaprio, L. (2011). Dynamic subsidence of Eastern Australia during the Cretaceous. *Gondwana Research*, 19(2), 372-383. <a href="http://dx.doi.org/10.1016/j.gr.2010.06.006">[More Information]</a>

Herold, N., Huber, M., Greenwood, D., Muller, R., Seton, M. (2011). Early to middle Miocene monsoon climate in Australia.

*Geology*, 39(1), 3-6. <a href="http://dx.doi.org/10.1130/G31208.1">[More Information]</a>

Williams, S., Whittaker, J., Muller, R. (2011). Full-fit, palinspastic reconstruction of the conjugate Australian-Antarctic margins. *Tectonics*, 30(6), TC6012-1-TC6012-21. <a href="http://dx.doi.org/10.1029/2011TC002912">[More Information]</a>

DiCaprio, L., Gurnis, M., Muller, R., Tan, E. (2011). Mantle dynamics of continentwide Cenozoic subsidence and tilting of Australia. *Lithosphere*, 3(5), 311-316. <a href="http://dx.doi.org/10.1130/L140.1">[More Information]</a>

Herold, N., Huber, M., Muller, R. (2011). Modeling the Miocene climatic optimum, Part 1: land and atmosphere. *Journal of Climate*, 24(24), 6353-6372. <a href="http://dx.doi.org/10.1175/2011JCLI4035.1">[More Information]</a>

Hoernle, K., Hauff, F., Werner, R., van den Bogaard, P., Gibbons, A., Conrad, S., Muller, R. (2011). Origin of Indian Ocean Seamount Province by shallow recycling of continental lithosphere. *Nature Geoscience*, 4(2), 883-887. <a href="http://dx.doi.org/10.1038/ngeo1331">[More Information]</a>

Matthews, K., Muller, R., Wessel, P., Whittaker, J. (2011). The tectonic fabric of the ocean basins. *Journal of Geophysical Research*, 116, B12109-1-B12109-28. <a href="http://dx.doi.org/10.1029/2011JB008413">[More Information]</a>

## 2010

DiCaprio, L., Muller, R., Gurnis, M. (2010). A dynamic process for drowning carbonate reefs on the northeastern Australian margin. *Geology*, 38(1), 11-14. <a href="http://dx.doi.org/10.1130/G30217.1">[More Information]</a>

Herold, N., Muller, R., Seton, M. (2010). Comparing early to middle Miocene terrestrial climate simulations with geological data. *Geosphere*, 6(6), 952-961. <a href="http://dx.doi.org/10.1130/GES00544.1">[More Information]</a>

Whittaker, J., Muller, R., Gurnis, M. (2010). Development of the Australian-Antarctic depth anomaly. *Geochemistry, Geophysics, Geosystems*, 11(11), 1-23. <a href="http://dx.doi.org/10.1029/2010GC003276">[More Information]</a>

Rey, P., Muller, R. (2010). Fragmentation of active continental plate margins owing to the buoyancy of the mantle wedge. *Nature Geoscience*, 3(4), 257-261. <a href="http://dx.doi.org/10.1038/NNGEO825">[More Information]</a>

Mjelde, R., Wessel, P., Muller, R. (2010). Global pulsations of intraplate magmatism through the Cenozoic. *Lithosphere*, 2(5), 361-376. <a href="http://dx.doi.org/10.1130/L107.1">[More Information]</a>

Heine, C., Muller, R., Steingberger, B., DiCaprio, L. (2010). Integrating deep Earth dynamics in paleogeographic reconstructions of Australia. *Tectonophysics*, 483(1-2), 135-150. <a href="http://dx.doi.org/10.1016/j.tecto.2009.08.028">[More Information]</a>

Shephard, G., Muller, R., Liu, L., Gurnis, M. (2010). Miocene

drainage reversal of the Amazon River driven by plate-mantle interaction. *Nature Geoscience*, 3(12), 870-875. <a href="http://dx.doi.org/10.1038/ngeo1017">[More Information]</a>

Liu, L., Gurnis, M., Seton, M., Saleeby, J., Muller, R., Jackson, J. (2010). The role of oceanic plateau subduction in the Laramide orogeny. *Nature Geoscience*, 3(5), 353-357. <a href="http://dx.doi.org/10.1038/NNGEO829">[More Information]</a>

## 2009

Tong, J., You, Y., Muller, R., Seton, M. (2009). Climate model sensitivity to atmospheric CO<sub>2</sub> concentrations for the middle Miocene. *Global and Planetary Change*, 67(3-4), 129-140. <a href="http://dx.doi.org/10.1016/j.gloplacha.2009.02.001">[More Information]</a>

Herold, N., You, Y., Muller, R., Seton, M. (2009). Climate model sensitivity to changes in Miocene paleotopography. *Australian Journal of Earth Sciences*, 56(8), 1049-1059. <a href="http://dx.doi.org/10.1080/08120090903246170">[More Information]</a>

Maus, S., Barckhausen, U., Berkenbosch, H., Bournas, N., Brozena, J., Childers, V., Dostaler, F., Fairhead, J., Finn, C., Frese von, R., Muller, R., et al (2009). EMAG2: A 2-arc min resolution Earth Magnetic Anomaly Grid compiled from satellite, airborne, and marine magnetic measurements. *Geochemistry, Geophysics, Geosystems*, 10(8), 1-12. <a href="http://dx.doi.org/10.1029/2009GC002471">[More Information]</a>

DiCaprio, L., Muller, R., Gurnis, M., Goncharov, A. (2009). Linking active margin dynamics to overriding plate deformation: Synthesizing geophysical images with geological data from the Norfolk Basin. *Geochemistry, Geophysics, Geosystems*, 10(1), 1-14. <a href="http://dx.doi.org/10.1029/2008GC002222">[More Information]</a>

DiCaprio, L., Gurnis, M., Muller, R. (2009). Long-wavelength tilting of the Australian continent since the Late Cretaceous. *Earth and Planetary Science Letters*, 278, 175-185. <a href="http://dx.doi.org/10.1016/j.epsl.2008.11.030">[More Information]</a>

Seton, M., Gaina, C., Muller, R., Heine, C. (2009). Mid-Cretaceous seafloor spreading pulse: Fact or fiction? *Geology*, 37(8), 687-690. <a href="http://dx.doi.org/10.1130/G25624A.1">[More Information]</a>

Becker, T., Conrad, C., Buffett, B., Muller, R. (2009). Past and present seafloor age distributions and the temporal evolution of plate tectonic heat transport. *Earth and Planetary Science Letters*, 278, 233-242. <a href="http://dx.doi.org/10.1016/j.epsl.2008.12.007">[More Information]</a>

You, Y., Huber, M., Muller, R., Poulsen, C., Ribbe, J. (2009). Simulation of the Middle Miocene Climate Optimum. *Geophysical Research Letters*, 36(4), 1-5. <a href="http://dx.doi.org/10.1029/2008GL036571">[More Information]</a>

## 2008

Muller, R., Seton, M., Gaina, C., Roest, W. (2008). Age, spreading rates, and spreading asymmetry of the world's ocean crust. *Geochemistry, Geophysics, Geosystems*, 9(4), 1-19. <a href="http://dx.doi.org/10.1029/2007GC001743">[More Information]</a>

Dyksterhuis, S., Muller, R. (2008). Cause and evolution of

intraplate orogeny in Australia. *Geological Society of America Bulletin*, 36(6), 495-498. <a href="http://dx.doi.org/10.1130/G24536A.1">[More Information]</a>

Clark, S., Muller, R. (2008). Convection models in the Kamchatka region using imposed plate motion and thermal histories. *Journal of Geodynamics*, 46(1-2), 1-9. <a href="http://dx.doi.org/10.1016/j.jog.2008.02.002">[More Information]</a>

Clark, S., Stegman, D., Muller, R. (2008). Episodicity in back-arc tectonic regimes. *Physics of the Earth and Planetary Interiors*, 171(1-4), 265-279. <a href="http://dx.doi.org/10.1016/j.pepi.2008.04.012">[More Information]</a>

Torsvik, T., Muller, R., Van der Voo, R., Steinberger, B., Gaina, C. (2008). Global plate motion frames: Toward a unified model. *Reviews of Geophysics*, 46(3), RG3004-1-RG3004-44. <a href="http://dx.doi.org/10.1029/2007RG000227">[More Information]</a>

Whittaker, J., Muller, R., Roest, W., Wessel, P., Smith, W. (2008). How supercontinents and superoceans affect seafloor roughness. *Nature*, 456(7224), 938-941. <a href="http://dx.doi.org/10.1038/nature07573">[More Information]</a>

Muller, R., Seton, M., Gaina, C., Steinberger, B., Heine, C. (2008). Long-Term Sea-Level Fluctuations Driven by Ocean Basin Dynamics. *Science*, 319(5868), 1357-1362. <a href="http://dx.doi.org/10.1126/science.1151540">[More Information]</a>

Herold, N., Seton, M., Muller, R., You, Y., Huber, M. (2008). Middle Miocene tectonic boundary conditions for use in climate models. *Geochemistry, Geophysics, Geosystems*, 9(10), Q10009-1-Q10009-10. <a href="http://dx.doi.org/10.1029/2008GC002046">[More Information]</a>

Maus, S., Yin, F., Luhr, H., Monoj, C., Rother, M., Rauberg, J., Michaelis, I., Stolle, C., Muller, R. (2008). Resolution of direction of oceanic magnetic lineations by the sixth-generation lithospheric magnetic field model from CHAMP satellite magnetic measurements. *Geochemistry, Geophysics, Geosystems*, 9(7), Q07021-1-Q07021-10. <a href="http://dx.doi.org/10.1029/2008GC001949">[More Information]</a>

Whittaker, J., Muller, R., Leitchenkov, G., Stagg, H., Seton, M., Gaina, C., Goncharov, A. (2008). Response to comment on "Major Australian-antarctic plate reorganization at Hawaiian-emperor bend time". *Science*, 321(5888), 490. <a href="http://dx.doi.org/10.1126/science.1157501">[More Information]</a>

Xie, X., Muller, R., Ren, J., Jiang, T., Zhang, C. (2008). Stratigraphic architecture and evolution of the continental slope system in offshore Hainan, northern South China Sea. *Marine Geology*, 247, 129-144. <a href="http://dx.doi.org/10.1016/j.margeo.2007.08.005">[More Information]</a>

Heine, C., Muller, R., Steinberger, B., Torsvik, T. (2008). Subsidence in intracontinental basins due to dynamic topography. *Physics of the Earth and Planetary Interiors*, 171(1-4), 252-264. <a href="http://dx.doi.org/10.1016/j.pepi.2008.05.008">[More Information]</a>

Spasojevic, S., Liu, L., Gurnis, M., Muller, R. (2008). The case for dynamic subsidence of the U.S. east coast since the Eocene. *Geophysical Research Letters*, 35(8), 1-6. <a href="http://dx.doi.org/10.1029/2008GL033511">[More Information]</a>

Information]</a>

## 2003

Hillis, R., Muller, R. (2003). Introduction. Evolution and dynamics of the Australian plate. *Geological Society of Australia Special Publication*, 11, 1-7.