
CURRICULUM VITAE

Senckenberg Biodiversity and Climate Research Centre
& Goethe University Frankfurt

Prof. Dr. Andreas Mulch

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EDUCATION

UNIVERSITÉ DE LAUSANNE, SWITZERLAND

2004 Dr. ès sci. in Mineralogy/Geochemistry

Thesis: "Integrated high-spatial resolution $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology, stable isotope geochemistry, and structural analysis of extensional detachment systems"

JUSTUS LIEBIG UNIVERSITÄT GIESSEN, GERMANY

1999 Dipl. Geol. in Geology (Tectonics, geochronology)

Thesis: "Age of synkinematic mafic dikes in the middle and lower crust of the Ivrea Verbano and Strona-Ceneri Zones (Switzerland and Italy)"

PROFESSIONAL POSITIONS

Senckenberg Research Institutes and Natural History Museums, Germany

2015 – Present Director, Senckenberg Research Institute and Natural History Museum Frankfurt

2013 – Present Vice-Director General, Senckenberg Gesellschaft für Naturforschung

2010 – Present Vice-Director, Senckenberg Biodiversity and Climate Research Centre

Stanford University, Stanford, USA

2014 - 2015 Cox Visiting Professor, School of Earth Sciences

Goethe University Frankfurt, Germany

2010 - Present Full Professor (W3) of Paleoclimate and Paleoenvironmental Dynamics,
Institute of Geosciences

Leibniz University Hannover, Germany

2007 - 2010 Director, Institute of Geology

2006 - 2010 Associate Professor (W2, tenured), Institute of Geology

Stanford University, USA

2005 - 2006 Research Associate, Department of Geological & Environmental Sciences

University of Minnesota and Stanford University, USA

2004 - 2005 US-NSF Research Associate, Department of Geology and Geophysics,

HONORS AND AWARDS

2016	Fellow of the Geological Society of America
2013	A. Cox Award, School of Earth Sciences, Stanford University, USA
2010	Elected GAFOS participant A. v. Humboldt Foundation and National Academy of Sciences (USA)
2004	Prix de la Faculté (PhD Award), School of Earth and Environmental Sciences, Université de Lausanne, Switzerland
1999	Diploma thesis with distinction, Justus Liebig University Giessen, Germany

RESEARCH INTERESTS

- Observational and isotope geochemical studies of climate and tectonics
- Stable isotope paleoaltimetry and the tectonic and topographic evolution of orogens
- Understanding the evolution of landscapes and life
- Meteoric fluid in flow in faults and detachment zones
- Stable isotope-based long-term temperature and precipitation reconstructions

SERVICE

EDITORIAL SERVICE

2015 - Present	Basin Research, Editor
2009 - Present	American Journal of Science, Associate Editor

PROFESSIONAL SERVICE

2016 - Present	German Geological Society (DGGV) – Geol. Soc. America liaison officer
2015 - Present	German Science Foundation (DFG) panel member, ICDP program
2014 - Present	Executive Council German Geological Society (DGGV)
2014 - 2015	Vice Chairman German Geological Society (GV)
2012	Organizing committee „German-American Frontiers of Science“. Humboldt Foundation and National Academy of Sciences (USA)
2010 - 2013	German Science Foundation (DFG) panel member, ICDP program
2009 - 2014	Executive Council German Geological Society (GV)
2008	US-National Science Foundation <i>EAR Tectonics</i> panel member
2004	Member US-National Science Foundation white paper group „Paleoaltimetry“

GOETHE UNIVERSITY FRANKFURT

2011 - Present	Advisor to the senate of Goethe University Frankfurt (faculty searches)
2015	<i>Systematic Zoology</i> faculty (W3) search committee
2015	<i>Geology</i> faculty (W3) search committee
2014	<i>Geobiology</i> faculty (W2) search committee (chair)

LEIBNIZ UNIVERSITY HANNOVER

2007-2009	Executive Board, School of Natural Sciences, Leibniz University Hannover
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CONVENER OF CONFERENCES AND SESSIONS

2016	AGU Fall Meeting, convener
2014	German Geological Society (GV) Annual Meeting, convener
2013	AGU Fall Meeting “Linking Earth Surface Dynamics and Deep Tectonic Processes”, convener
2011	“Terrestr. Stable Isot. Paleohydrol.” GSA-GV Annual Meeting, Munich, convener
2008	AGU Fall Meeting “Interactions Among Climate, Exhumation & Tectonics Through the Changing Climate of the Neogene and Quaternary”, convener
2007	Goldschmidt Conference “Geochemical constraints on the topographic evolution of Cenozoic orogens”, convener

- 2006 Geologische Vereinigung, Annual Meeting Potsdam, convener
 2005 AGU Fall Meeting “Topographic and Climatic Evolution of Cenozoic Mountain Belts”, convener

EXAMINER AT OTHER UNIVERSITIES

- 2014 External Examiner, PhD Thesis, Kerstin Bauer, Université de Lausanne
 2013 External Examiner, PhD Thesis, Antoine Quilichini, Université de Lausanne

INVITED LECTURES

- 2017 US-NSF workshop on Landscapes and Mammal Evolution, Seattle, USA
 2016 Kyoto University, Japan
 Goldschmidt Conference, Osaka, Japan
 Third Pole Environment Meeting, Byrd Polar and Climate Research Center, Columbus, Ohio, USA
 2015 DFG-NSFC Sino-German Meeting, Kunming, China
 European Geophysical Union Annual Meeting, Vienna, Austria; Keynote
 United States Geologic Survey, Denver
 Stanford University, Environmental Earth System Science, Winter Seminar
 University of Freiberg, Department Seminar
 2014 University of California, Santa Cruz, Department Seminar
 University of Nevada, Las Vegas, Department Seminar
 2013 Joint 28th HKT and 6th ISTEP meeting Tübingen; Keynote
 European Geophys. Union Annual Meeting, Vienna (Austria); Keynote
 2012 ETH Zurich, Switzerland
 BMBF-CAME Annual Meeting, Frankfurt; Keynote
 Leibniz Center for Marine Tropical Systems (ZMT), Bremen
 Max Planck Institute for Biogeochemistry, Jena; Department Seminar
 Stanford University, Environmental Earth System Science, Winter Seminar
 Syracuse University, Dep. Earth Sciences, K. Douglas Nelson Lecture Series
 2011 European Geophys. Union Annual Meeting, Vienna (Austria) Keynote
 2010 ESF TopoEurope Annual meeting Oslo (Norway) Keynote
 GSA Tectonic Crossroads Meeting Ankara (Turkey) Keynote
 University of Jena; Department Seminar
 University of Tübingen; Department Seminar
 2009 University of Göttingen
 American Geophysical Union, San Francisco (2 Keynotes)
 Goethe University Frankfurt
 Geol. Soc. Of America Annual Meeting, Oregon
 2008 University Braunschweig; Department Seminar
 Leibniz School Surface and Climate Processes, Potsdam
 University of California, Santa Cruz (USA)
 EGU Annual Meeting, Vienna (Austria)
 2007 Min. Soc. America workshop “Paleoaltimetry” (Denver, USA)
 University Bochum; Department Seminar
 University Münster; Department Seminar
 2006 University Göttingen; Department Seminar
 Goldschmidt Conference (Melbourne, AUS)
 2005 Leibniz University Hannover
 University of Chicago (USA)
 Stanford University (USA)
 2004 Norwegian Geological Survey (Trondheim, NO) *Goldschmidt lecture*
 British Antarctic Survey (Cambridge, GB)

ADVISED STUDENTS AND POSTDOCTORAL SCHOLARS

CURRENT POSTDOCTORAL SCHOLARS

Dr. Maud Meijers
Dr. Katharina Methner
Dr. Iuliana Vasiliev

CURRENT PHD STUDENTS (A. MULCH ADVISOR)

Fabian Schemmel (PhD candidate) 2011 - present
Alexandra Hellwig (PhD candidate) 2013 - present
Nicolo Ardenghi (PhD candidate) 2013 - present
Niklas Löffler (PhD candidate) 2016 – present
Emilija Krsnik (PhD candidate) 2017 - present

FORMER PHD STUDENTS* AND POSTDOCTORAL SCHOLARS (CURRENT POSITION IN PARENTHESES)

Dr. Alexis Licht (Ass. Professor, Univ. Washington)
Dr. Katharina Methner* (Research Associate, Senckenberg)
Dr. Tina Lüdecke* (PostDoc, New York University)
Dr. Vanesa Nieto-Moreno (self-employed)
Dr. Jussi Eronen 2013-2015 (Research Associate, University of Helsinki, Finland)
Dr. Kerstin Bauer* -jointly with Universite de Lausanne- 2009-2014 (PostDoc, ETH Zurich)
Dr. Aude Gebelin 2008-2014 (Lecturer, University of Plymouth, UK)
Dr. Marion Campani 2008-2012 (maternity leave)
Dr. Tamas Mikes 2008-2012 (Eiriksfjord AS, Norway)

FORMER BSc OR MSc/DIPLOMA STUDENTS (A. MULCH ADVISOR/CO-ADVISOR)

Emilija Krsnik (MSc) 2015
Christoph Schreiber (BSc) 2015
Patrick Nowara (BSc) 2015
Tina Lüdecke (Diploma) 2010
Katharina Methner (Diploma) 2010
Nadine Dannhaus (Diploma) 2010
Ricarda Maekeler (Diploma) 2010
Julia Marquard (Diploma) 2010
Svenja Rosenwinkel (Diploma) 2010
Nicole Martini (Diploma) 2010
Sonja Möhring (Diploma) 2010
Prisca Miehe (Diploma) 2010
Oliver Preuss (BSc) 2010
Philipp Nasemann (Diploma) 2010
Gerrit Knape (Diploma) 2010
Mareike Rätz (BSc) 2010
Kirsten Fromme (Diploma) 2009
Michaela Fischer (BSc) 2009
Sandra Oehlmann (BSc) 2009
Marco Goyer (Diploma) 2009
Gesa Milzer (Diploma) 2008
Martin Olschewski (BSc) 2008
Markus Hoffmann (Diploma) 2008
Simon Kübler (Diploma) 2008
Anja Freund (BSc) 2007
Sabine Schwienbacher (BSc) 2007

Publications

Publication metrics

Total number of citations: 1815 (WoS), 2395 (google Scholar)

Hirsch (H) index = 24 (WoS), 28 (google Scholar)

Average H index growth since year of PhD = 1.9 / yr (WoS), 2.3 / yr (google Scholar)

*advised/**co-advised student; underlined = advised postdoctoral scholar

Accepted pending revision:

82. *Schemmel, F., Niedermeyer, E.N., Koutsodendris, A., Pross, J., Fiebig, J., **Mulch, A.**, (subm.) Paleohydrological changes in the Eastern Mediterranean region during the early Holocene recorded in plant wax *n*-alkane distributions and $\delta^{13}\text{C}_{\text{TOC}}$ - new data from Tenaghi Philippon, NE Greece. *Organic Geochemistry*.

In press:

81. Licht, A., Coster, P., Ocakoglu, F., Campbell, C., Metais, G., **Mulch, A.**, Taylor, M., Kappelman, J., Beard, K.C. (2017) Tectono-stratigraphy of the Orhaniye Basin, Turkey: Implications for collision chronology and Paleogene biogeography of central Anatolia, *Journal of Asian Earth Sciences*.
80. Gébelin, A., Jessup, M., Teyssier, C., Cosca, M.A., Law, R.D., Brunel, M., **Mulch, A.** (2017) Infiltration of meteoric water in the South Tibetan Detachment (Mt. Everest, Himalaya): When and Why? *Tectonics*.

2017

79. Barnosky, A.D., Hadly, E.A., Gonzalez, P., Head, J., Polly, P.D., Lawing, A.M., Eronen, J.T., ... **Mulch, A.**, ... Zhang, Z. (2017) Linking Past, Present, and Future to Establish Safe Operating Parameters for Rapidly Changing Terrestrial Ecosystems. *Science*, 355, eaah4787.
78. Badgley, C., Smiley, T.M., Davis, E.B., DeSantis, L.R.G., Fox, D.L., Hopkins, S.B., Jezkova, T., Matocq, M.D., Matzke, N., McGuire, J.L., **Mulch, A.**, Riddle, B.R., Roth, L., Samuels, J.X., Strömberg, C.A.E., Terry, R., Yanites, B.J. (2017) Biodiversity and topographic complexity: Modern and geohistorical perspectives, *Trends in Ecology and Evolution*, 32, 211-226.
77. **Mulch, A.**, Chamberlain, C.P. (2017) Stable isotope paleoaltimetry: Paleotopography as a key element in the evolution of landscapes and life. *in: Mountains, Climate and Biodiversity*, Hoorn, C. & Antonelli, A. (eds.) *Wiley*.
76. Mosbrugger, V., Favre, A., Muellner-Riehl, A., Päckert, M., **Mulch, A.** (2017) Cenozoic evolution of Geo-Biodiversity in the Tibeto-Himalayan region. *in: Mountains, Climate and Biodiversity*, Hoorn, C. & Antonelli, A. (eds.) *Wiley*.
75. Panait, A., Diaconu, A., Galka, M., Hutchinson, S.M., Hickler, T., Lamentowicz, M., **Mulch, A.**, Tantau, I., Werner, C., Feurdean, A. (2017.) Hydrological conditions and carbon accumulation rates reconstructed from a raised mountain bog in the Carpathians: a multi-proxy approach. *Catena* 152, 57-68.

2016

74. **Mulch, A.**, Rohrman, A., Sachse, D., **Mulch, A.**, Pingel, H., Tofelde, S., Alonso, R.N., Strecker, M.R. (2016) Miocene orographic uplift forces rapid hydrological change in the southern central Andes. *nature Scientific Reports* 6, 35678.

73. Mancktelow, N., Zwingmann, H., **Mulch, A.** (2016) K-Ar Dating of fault gouge from the Naxos detachment (Cyclades, Greece). *Tectonics*.
72. Haines, S., Lynch, E., **Mulch, A.**, Valley, J.W., van der Pluijm, B. (2016) Meteoric fluid infiltration in crustal-scale normal fault systems as indicated by $\delta^{18}\text{O}$ and $\delta^2\text{H}$ geochemistry, and Ar dating of neoformed clays in brittle fault rocks. *Lithosphere*, 8, 587-600.
71. Fritz, S.A., Eronen, J.T., Schnitzler, J., Hof, C. Janis, C.M., **Mulch, A.**, Böhning-Gaese, K., Graham, C.H. (2016) Humans dissolve a 20-million-year link between productivity and mammalian diversity. *Proceedings of the National Academy of Sciences*, doi/10.1073/pnas.1602145113
70. Nieto-Moreno, V., **Rohrmann, A.**, van der Meer, M.T.J., Sinninghe Damsté, J.S., Sachse, D., Tofelde, S., Niedermeyer, E.N., Strecker, M.R., **Mulch, A.** (2016) Elevation-dependent changes in n-alkane δD and soil GDGTs across the South Central Andes. *Earth and Planetary Science Letters* 453, 234-242.
69. *Lüdecke, T., **Mulch, A.**, Kullmer, O., Sandrock, O., Thiemeyer, H., Fiebig, J., Schrenk, F. (2016) Stable isotope dietary reconstructions of herbivore enamel reveal heterogeneous wooded savanna ecosystems in the Plio-Pleistocene Malawi Rift. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 459, 170-181.
68. *Methner, K., **Mulch, A.**, Fiebig, J., Wacker, U., Gerdes, A., Graham, S.A., Chamberlain, C.P., (2016) Rapid Middle Eocene temperature change in western North America. *Earth and Planetary Science Letters*, 450, 132-139.
67. Niedermeyer, E.N., Forrest, M., Beckmann, B., Sessions, A.L., **Mulch, A.**, Schefuß, E. (2016) The stable hydrogen isotopic composition of sedimentary plant waxes as quantitative proxy for rainfall in the West African Sahel. *Geochimica Cosmochimica Acta*, 184, 55-70.
66. Lagomarsino, L.P., Condamine, F.L., Antonelli, A., **Mulch, A.**, Davis, C.C. (2016) The abiotic and biotic drivers of rapid diversification in Andean bellflowers (Campanulaceae). *New Phytologist* 210, 1430-1442.
65. Meijers, M.J.M., Strauss, B., Özkaptan, M., Feinberg, J.M., **Mulch, A.**, Whitney, D.L., Kaymakci, N. (2016) Age and paleoenvironmental reconstruction of partially remagnetized lacustrine sedimentary rocks (Oligocene Aktoprak basin, central Anatolia, Turkey). *Geochem. Geophys. Geosyst.* 17, doi:10.1002/2015GC006209.
64. *Methner, K., Fiebig, J., Wacker, U., Umhoefer, P., Chamberlain, C.P., **Mulch, A.** (2016) Eo-Oligocene proto-Cascades topography revealed by clumped (Δ_{47}) and oxygen isotope ($\delta^{18}\text{O}$) geochemistry (Chumstick Basin, WA, USA). *Tectonics*, 35, doi: 10.1002/2015TC003984.
63. **Pingel, H., **Mulch, A.**, Alonso, R.A., Cottle, J., Hynek, S.A., Poletti, J., **Rohrmann, A.**, Schmitt, A.K., Stockli, D.F., Strecker, M.R. (2016) Surface uplift and convective rainfall along the southern Central Andes (Angastaco Basin, NW Argentina). *Earth and Planetary Science Letters*, 440, 33-42.
62. *Schemmel, F., Niedermeier, E.M., Schwab, V.F., Gleixner, G., Pross, J., **Mulch, A.** (2016) Plant wax δD values record changing Eastern Mediterranean atmospheric circulation patterns during the 8.2 kyr B.P. climatic event. *Quaternary Science Reviews*, 133, 96-107.
61. **Mulch, A.** (2016) Stable isotope paleoaltimetry and the evolution of landscapes and life. *Earth and Planetary Science Letters*, **Invited Frontiers Article** 433, 180-191.
60. *Lüdecke, T., Schrenk, F., Thiemeyer, H., Kullmer, O., Bromage, T.G., Sandrock, O., Fiebig, J., **Mulch, A.** (2016) Persistent C3 vegetation accompanied Plio-Pleistocene hominin evolution in the Malawi Rift (Chiwondo Beds, Malawi). *Journal of Human Evolution*, 90, 163-175.

59. Olaka, L., Wilke, F.D.H., Olago, D., Odada, E., **Mulch, A.**, Musolff, A. (2016) Groundwater fluoride enrichment in an active rift setting: Central Kenya Rift case study. *Science of the Total Environment*, 545-546, 641-653.
58. Mix, H., Ibarra, D.E., **Mulch, A.**, Graham, S.A., Chamberlain, C.P. (2016) A hot and high Eocene Sierra Nevada. *Geol. Soc. America Bulletin*, doi:10.1130/B31294.1
57. Macaulay, E.A., Sobel, E.R., Mikolaichuk, A., Wack, M., Gilder, S., **Mulch, A.**, Fortuna, A.B., Hynek, S. (2016) The sedimentary record of the Issyk Kul basin, Kyrgyzstan: climatic and tectonic inferences. *Basin Research*, 28, 57-80.

2015

56. Fanara, S., Botcharnikov, R.E., Palladino, D.M., Adams, F., Buddensiek, J., **Mulch, A.**, Behrens, H. (2015) Volatiles in magmas related to Campanian ignimbrite eruption: Experiments vs. natural findings. *American Mineralogist*, 100, 10, 2284-2297.
55. Caves, J.K., Winnick, M.J., Graham, S.A., Sjostrom, D.J., **Mulch, A.** and Chamberlain, C.P. (2015) Role of Westerlies in Central Asia climate over the Cenozoic. *Earth and Planetary Science Letters*, 428, 33-43.
54. Boles, A., van der Pluijm, B., **Mulch, A.**, Mutlu, H., Uysal, I. T., Warr, L. (2015) Hydrogen and $^{40}\text{Ar}/^{39}\text{Ar}$ isotope evidence for multiple and protracted paleofluid flow events within the long-lived North Anatolian Keirogen (Turkey). *Geochem. Geophys. Geosyst.* DOI 10.1002/2015GC005810
53. Eronen, J.T., Janis, C.M., Chamberlain, C.P., **Mulch, A.** (2015) Mountain uplift explains differences in Palaeogene patterns of mammalian evolution and extinction between North America and Europe. *Trans. Royal. Soc London B.* 282: 20150136
52. Feurdean, A., Galka, M., Kuske, E., Tantau, I., Lamentowicz, M., Florescu, G., Hutchinson, S.M., Liakka, J., **Mulch, A.**, Hickler, T. (2015) Last Millennium hydro-climate variability in Central Eastern Europe (Northern Carpathians, Romania). *The Holocene*, 25, 1179-1192. doi: 10.1177/0959683615580197
51. McFadden, R., **Mulch, A.**, Teyssier, C., Heizler, M. (2015) Eocene extension and meteoric fluid flow in the Wildhorse Detachment, Pioneer metamorphic core complex, Idaho. *Lithosphere*. doi: 10.1130/L429.1
50. Mancktelow, N., Zwingmann, H., Campani, M., Fügenschuh, B., **Mulch, A.** (2015) Timing and conditions of brittle faulting on the Silltal-Brenner Fault Zone, Eastern Alps (Austria). *Swiss Journal of Geosciences*, 108, 305-326.
49. Vespasiano, G., Apollaro, C., De Rosa, R., Muto, F., Fiebig, J., **Mulch, A.**, Marini, L. (2015) The Small Spring Method (SSM) for the definition of stable isotope – elevation relationships in Northern Calabria (Southern Italy). *Applied Geochemistry*, 63, 333-346.
48. *Methner, K., **Mulch, A.**, Teyssier, C., Wells, M., Cosca, M., **Gottardi, R., Gébelin, A., Chamberlain, C.P. (2015) Eocene and Miocene extension, meteoric fluid infiltration and core complex formation in the Great Basin (Raft River Mountains, Utah). *Tectonics* 34, doi:10.1002/2014TC003766
47. **Mulch, A.**, Chamberlain, C.P., Cosca, M.A., Teyssier, C., *Methner, K., Hren, M.T., Graham, S.A. (2015) Rapid change in western North American high-elevation rainfall patterns during the Middle Eocene Climatic Optimum (MECO). *American Journal of Science*, 315, 317-336. doi: 10.2475/04.2015.02
46. **Gottardi, R., **Mulch, A.**, Teyssier, C., Valley, J. W., **Quilichini, A., Vennemann, T.W. (2015). Strain and Permeability gradients traced by stable isotope exchange in the Raft River detachment shear zone, Utah. *Journal of Structural Geology*, 71, 41-57. doi: 10.1016/j.jsg.2014.10.005
45. **Quilichini, A., Siebenaller, L., Nachlas, W.O., Teyssier, C., Vennemann, T., Heizler, M.T., **Mulch, A.**

(2015) Infiltration of meteoric fluids in an extensional detachment shear zone (Kettle dome, WA, USA): How quartz dynamic recrystallization relates to fluid-rock interaction. *Journal of Structural Geology*, 71, 71-85. doi: 10.1016/j.jsg.2014.11.008

44. Gébelin, A., Teyssier, C., Heizler, M., **Mulch, A.** (2015) Meteoric water circulation coupled to rolling-hinge detachment faulting, Northern Snake Range core complex, Nevada. *Geol. Soc. America Bulletin*, 127, 149-161. doi: 10.1130/B31063.1.

2014

43. ****Rohrmann, A.**, Strecker, M.R., Bookhagen, B., **Mulch, A.**, Sachse, D., Pingel, H., Alonso, R.N., Schildgen, T.F., Montero, C. (2014) Can stable isotopes ride out the storm? The role of convection for water isotopes in models, records, and paleoaltimetry studies in the central Andes. *Earth and Planetary Science Letters*, 407, 187-195.
42. ****Pingel, H.**, Alonso, R.A., **Mulch, A.**, ****Rohrmann, A.**, Sudo, M., and Strecker, M.R. (2014) Pliocene orographic barrier uplift in the southern Central Andes. *Geology*, 42, 691-694.
41. Nachlas, W.O., Whitney, D.L., Teyssier, C.T., Bagley, B., **Mulch, A.** (2014) Titanium concentration in quartz as a record of multiple deformation mechanisms in an extensional shear zone. *Geochem. Geophys. Geosyst.*, 15, 1374–1397, doi:10.1002/2013GC005200.

2013

40. Mix, H., Winnick, M.J., **Mulch, A.**, Chamberlain, C.P. (2013) Grassland expansion as an instrument of hydrologic change in Neogene western North America. *Earth and Planetary Science Letters*, 377-378, 73-83.
39. Kent-Corson, M.L., Barnosky, A. D., **Mulch, A.**, Carrasco, M.A., Chamberlain, C.P. (2013) Possible regional tectonic controls on mammalian evolution in western North America. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 387, 17-26.
38. Feng, R., Poulsen, C.J., Werner, M., Chamberlain, C.P., Mix, H., **Mulch, A.** (2013) Evolution of Early Cenozoic topography, climate and stable isotopes in precipitation in the North American Cordillera. *American Journal of Science*, 313, 613-648.
37. Regnery, J., Püttmann, W., Koutsodendris, A., **Mulch, A.**, Pross, J. (2013) Comparing the paleoclimatic significance of higher land plant biomarker concentrations and pollen data: A case study on lake sediments from the Holsteinian interglacial. *Organic Geochemistry*, 61, 73-84.
36. Gébelin, A., **Mulch, A.**, Teyssier, C., Jessup, M.J., Law, R.D., Brunel, M. (2013) The Miocene elevation of Mount Everest. *Geology*, 41, 7, 799-802.
35. Hoorn, C., Mosbrugger, V., **Mulch, A.**, Antonelli, A (2013) Biodiversity from mountain building. *Nature geoscience*, 6, 154.
34. Hetzel, R., Zwingmann, H., **Mulch, A.**, Gessner, K., Akal, C., Hampel, A., Güngör, T., Petschick, R., Mikes, T., Wedin, F. (2013) K-Ar ages and hydrogen isotope data from detachment fault systems in the Menderes Massif (Turkey): Implications for the timing of brittle deformation and fluid flow. *Tectonics*, 32, 1-13. doi:10.1002/tect.20031
33. *Lüdecke, T., Mikes, T., Rojay, B., Cosca, M., **Mulch, A.** (2013) Oligo-Miocene paleoenvironment and paleohydrology of Central Anatolian lake basins. *Turkish Journal of Earth Sciences (VAMP Special Volume)*; 22, 793-819. DOI: 10.3906/yer-1207-11
32. *Schemmel, F., Mikes, T., Rojay, B., **Mulch, A.** (2013) The impact of topography on isotopes in precipitation across the Central Anatolian Plateau (Turkey). *Am. Journal of Science*, 313, 61-80.
31. Mazzini, I., Hudackova, N., Joniak, P., Kovacova, M., Mikes, T., **Mulch, A.**, Rojay, B., Lucifora, S., Esu, D., Soulie-Märsche, I. Palaeoenvironmental And Chronological Constraints On The Tuğlu

Formation (Çankırı Basin, Central Anatolia, Turkey) (2013) *Turkish Journal of Earth Sciences* (VAMP Special Volume) 22, 747-777. DOI: 10.3906/yer-1207-10

2012

30. Campani, M., **Mulch, A.**, Kempf, O., Schlunegger, F., Mancktelow, N. (2012) Miocene paleotopography of the Central Alps. *Earth and Planetary Science Letters*, 337-338, 174-185.
29. Gebelin, A., **Mulch, A.**, Teyssier, C., Chamberlain, C.P., Heizler, M. (2012) Coupled basin-detachment systems as paleoaltimetry archives of the western North American Cordillera, *Earth and Planetary Science Letters*, 335-336, 36-47.
28. Chamberlain, C.P., Mix, H.T., **Mulch, A.**, Hren, M.T., Kent-Corson, M.L., Davis, S.J., Horton, T.W., Graham, S.A. (2012) The Cenozoic Climatic and Topographic Evolution of the Western North American Cordillera, *American Journal of Science*, 312, 213-262. DOI 10.2475/04.2011.00

2011

27. Königer, P., Marshall, J.D., Link, T., **Mulch, A.** (2011) An inexpensive, fast, and reliable method for vacuum extraction of soil and plant water for stable isotope analyses by mass spectrometry. *Rap. Comm. Mass Spect.*, 25, 3041-3048.
26. Gebelin, A., **Mulch, A.**, Teyssier, C., Heizler, M., Vennemann, T.W., Seaton, N.C.A. (2011) Oligo-Miocene extensional tectonics and fluid flow across the Northern Snake Range detachment system, Nevada. *Tectonics*, 30, TC5010 DOI 10.1029/2010TC002797.
25. Gottardi, R., Teyssier, C., **Mulch, A.**, Vennemann, T. W., Wells, M. L. (2011) Preservation of an extreme geotherm in the Raft River detachment shear zone. *Geology*, 39, 759-762.
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