

CURRICULUM VITAE

DR. TINA LÜDECKE

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Webpages [MPIC](#) [Senckenberg BiK-F](#) [Oxford University](#)
 [Google Scholar](#) [ORCID](#) [Research Gate](#)

PROFESSIONAL EXPERIENCE

- 2021 – present Post-Doctoral Researcher at the Climate Geochemistry Department, **Max-Planck Institute for Chemistry**, Mainz, Germany (head: Prof. G. Haug)
- 2021 – present Guest researcher at **Senckenberg Biodiversity and Climate Research Centre** (SBiK-F), Frankfurt, Germany. Group Paleoclimate and Paleoenvironmental Dynamics (head: Prof. A. Mulch)
- 2017 – present Research Associate at the School of Anthropology and Museum Ethnography, **University of Oxford**, England (host: Dr. S. Carvalho)
- 2016 – present Geochemist for the **Paleo-Primate-Project Gorongosa**, reconstruction of paleoenvironments of the southern part of the East African Rift, Gorongosa National Park, Mozambique (PIs: Dr. S. Carvalho & Prof. R. Bobe)
- 2019 – 2020 Guest researcher at the AMG laboratory, **Max-Planck Institute for Chemistry**, Mainz, Germany (head: Dr. Alfredo Martínez García)
- 2017 – 2020 Post-Doctoral Researcher (DFG-funded), **Senckenberg Biodiversity and Climate Research Centre** (SBiK-F), Frankfurt, Germany. Group Paleoclimate and Paleoenvironmental Dynamics (head: Prof. A. Mulch)
- DFG-ICDP-Project personal grant (LU 2199/1 and /1-2): *Early Hominin Adaptation in the Southern East African Rift – Plio-Pleistocene African temperature, ecosystem and early hominin diet patterns across a woodland-grassland savanna boundary*
- 2016 – 2017 Post-Doctoral Researcher, Biomaterials and Biomimetics, College of Dentistry, **New York University**, New York City, USA. Method-development of simultaneous measurement of absolute concentrations of 71 elements in the periodic table (Li to U) via ICP-MS (head: Prof. T. Bromage)
- 2011 – 2016 PhD candidate, **Senckenberg Biodiversity and Climate Research Centre**, Frankfurt, Germany. *Stable isotope-based reconstruction of Neogene terrestrial archives*. Magna cum laude (supervisors: Prof. A. Mulch & Prof. F. Schrenk)

EDUCATION

PhD

University	Johann Wolfgang Goethe University Frankfurt , Germany, in cooperation with SBiK-F
Title	<i>Stable isotope-based reconstruction of Neogene terrestrial archives</i>
Defense	4 th May 2016, Dr. rer. nat., <i>magna cum laude</i>
Visiting PhD	School of Earth, Energy & Environmental Science, Stanford University , CA, USA, duration: 2 months (October & November 2014)
Summer School	Darwin Summer School on Biogeosciences “Perturbation of the global carbon cycle” in Utrecht and Texel, Netherlands, with the visit to NIOZ, duration: 2 weeks (July 2011)

Diploma (M.S.c.)

University	Gottfried-Wilhelm-Leibniz-University-Hannover , Germany
Title	Late Cenozoic Paleoenvironmental signatures of the Central Anatolian Plateau – Stable isotope geochemistry and Sedimentology of Lacustrine Sediments and Carbonate Paleosols
Duration	March 2010 – November 2010, Dipl.-Geowiss., grade 1.0 (very good)

AWARDED GRANTS **(TOTAL: CA. 363.000 €)**

2019	DFG – ICDP Priority Programme, personal grant including “Eigene Stelle”, 137.000 € (PI; LU 2199/1-2)
2018	National Geographic Explorer Grant, 18.000 US\$ (PI; NGS-51478R-18)
2017	DFG – ICDP Priority Programme, personal grant including “Eigene Stelle”, 208.000 € (PI; LU 2199/1)
2011, 2012	Hermann-Willkomm-Stiftung, two travel grants, 1.500 € total

TEACHING

2019, 2020	Masters course at the Goethe University: “ <i>Paleoenvironmental reconstructions in continental settings</i> ”, Frankfurt, Germany
2018, 2019	Oxford-Gorongosa Paleo-Primate Field School , Mozambique
2016	Seminar in “ <i>Evolutionsbiologie der Säugetiere und Paläoanthropologie</i> ”, Senckenberg, Frankfurt, Germany.

LABORATORY EXPERIENCE

IR-MS (Thermo 253)	Semi-automated acid bath and GC: clumped isotope analysis of pedogenic carbonates to reconstruct paleosol temperatures GasBench II: $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ analysis of fossil tooth enamel and pedogenic carbonates “ Coldtrap method ”: $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ analysis of extremely small sample amounts of fossil tooth enamel
(Thermo 253 Plus)	Biogeochemical denitrifier method: $\delta^{15}\text{N}$ analysis of fossil tooth enamel
si-ICP-MS (Spektro MS)	Analysis of 71 elements from Li to U in liquids (environmental water, beverage samples, biofluids)
LWIA (LGR DLT-100)	$\delta^{18}\text{O}$ and δD analysis of modern meteoric waters

FIELDWORK EXPERIENCE

2016, 2017, 2018, '19	Mazamba Formation, Gorongosa National Park, Mozambique , 4 months
2019	Atacama Desert and Patagonia, Chile , 2 weeks
2018	Manyara Beds, Manyara Basin, Tanzania (PI), 1.5 months
2016	Sangiran Formation, Java, Indonesia , 1 week
2011, 2012, 2013	Chiwondo Beds, Karonga Basin, Malawi (PI), 4 months
2012	North American Cordillera, Montana and Idaho, USA , 3 weeks
2008, 2010, 2011	Central Anatolian Plateau, Turkey , 2.5 months

REVIEWER FOR SCIENTIFIC JOURNALS

Since 2016	Nature Ecology and Evolution; Journal of Human Evolution; Chemical Geology; Paleobiology; Palaeogeography, Palaeoclimatology, Palaeoecology
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INVITED PRESENTATIONS

2021	Climate Geochemistry Department, Max-Planck Institute for Chemistry , Mainz
2020	Institute of Cognitive and Evolutionary Anthropology, Oxford University
2019	Vortragsreihe Forschungsreisen, Senckenberg Museum Frankfurt
2018	Department of Anthropology, University of Chile , Santiago
2017	Lamont-Doherty Earth Observatory, Columbia University , New York
2016	Department of Archaeology, Eberhard Karls University , Tübingen

MEDIA EXPOSURE

2020	Guest at Neil deGrasse Tyson's podcast StarTalk Radio , episode "Climate and Diet of Early Humans"; also available on YouTube and Spotify
2019	Research highlight "Hominins had flexible diets" by Nature Human Behavior Behind the paper: „Hominin adaptation in diverse savanna ecosystems" in Nature Ecology and Evolution Public lecture "Zähne der Zeit" on YouTube (German only) Newspaper article "Die Zahnfee von Senckenberg" in Bild (German only)
2018	Several newspaper articles reporting Lüdecke et al., 2018 (PNAS). Press release
2017	Paleo-Primate-Project Gorongosa on YouTube and vimeo
2016	Several newspaper articles reporting Lüdecke et al., 2016 (JHE). Press release

LIST OF PEER-REVIEWED PUBLICATIONS

h-index: 6; Number of citations: 135; i10-index: 4 (Google Scholar, February 10th, 2021)

Leichtler, J.N., **Lüdecke, T.**; Foreman, A.D., Duprey, N.N., Winkler, D.E., Kast, E.R., Vonhof, H., Sigman, D.M., Haug, G.H., Clauss, M., Tütken, T.; Martínez-García (2021). Nitrogen isotopes in tooth enamel record diet and trophic level enrichment: Results from a controlled feeding experiment. *Chemical Geology*, 120047.

- *My contribution:* Essential involvement in development of the novel method to measure $\delta^{15}\text{N}$ in tooth enamel, conceptualization of this study, experimental design for the analysis of enamel N isotopes, formal analysis and writing of the manuscript.

Habermann, J.M., Alberti, M., Aldeias, V., Alemseged, Z., Archer, W., Bamford, M., Biro, D., Braun, D.R., Capelli, C., Cunha, E., Ferreira da Silva, M., **Lüdecke, T.**, Madiquida, H., Martinez, F., Mathe, J., Negash, E., Paulo, L.M., Pinto, M., Stalmans, M., Tatá, F., Wynn, J., Bobe, R., Carvalho, S. (2019). Gorongosa by the sea: First Miocene fossil sites from the Urema Rift, central

- Mozambique, and their coastal paleoenvironmental and paleoecological contexts. *Paleogeography, Palaeoclimatology, Palaeoecology*, 514, 723-738.
- *My contribution*: Performing geological fieldwork with exploration, description and sampling of paleosols in Gorongosa. I independently conducted stable isotope sampling and measurements, wrote the $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ section of the paper and significantly contributed to the preparation of all other parts of the manuscript.
- Martinez, F.I., Capelli, C., Ferreira da Silva, M.J., Aldeias, V., Alemseged, Z., Archer, W., Bamford, M., Biro, D., Bobe, R., Braun, D., Habermann, J.M., **Lüdecke, T.**, Madiquida, H., Mathe, J., Negash, E., Paulo, L.M., Pinto, M., Stalmans, M., Tatá, F., Carvalho, S.A. (2019). A missing piece of the Papio puzzle: Gorongosa baboon phenostructure and intrageneric relationships. *Journal of Human Evolution*, 130, 1-20.
- *My contribution*: performing fieldwork with observation and documentation of baboon behavior in Gorongosa (2016, 17, 18, 19). Provided input to the final manuscript.
- Ernst, M., Thiemeyer, H., **Lüdecke, T.** (2019). Stable isotope signatures of radiocarbon dated pedogenic carbonate from Tell Chuera (NE Syria) reveal fluctuating paleoenvironmental patterns in the Pleistocene Levant. *Zeitschrift für Geomorphologie*, 62, Suppl. 1, 059-084.
- *My contribution*: Leading role in the study conception and design, measurement of stable isotopes, interpretation of the data, significant input in manuscript preparation.
- Lüdecke, T.**, Kullmer, O., Wacker, U., Sandrock, O., Fiebig, J., Schrenk, F., Mulch, A. (2018). Dietary Versatility of Early Pleistocene Hominins. *Proceedings of the National Academy of Sciences*, 115, 723-738.
- Meijers, M.J.M., Brocard, G.Y., Cosca, M.A., **Lüdecke, T.**, Teyssier, C., Whitney, D.L., Mulch, A. (2018). Rapid Late Miocene Surface Uplift of the Central Anatolian Plateau Margin. *Earth and Planetary Science Letters*, 497, 29-41.
- *My contribution*: Performing fieldwork including the exploration, description and sampling of carbonates in the Central Anatolian Plateau. I measured stable isotopes samples and significantly contributed to the manuscript preparation.
- Lüdecke, T.**, Mulch, A., Kullmer, O., Sandrock, O., Thiemeyer, Fiebig, J., Schrenk, F. (2016). Stable isotope dietary reconstructions of herbivore enamel reveal heterogeneous savanna ecosystems in the Plio-Pleistocene Malawi Rift. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 459, 170–181.
- 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, Karonga Basin, East African Rift System). *Journal of Human Evolution*, 90, 163-175.
- Fiebig, J., Hofmann, S., Löffler, N., **Lüdecke, T.**, Methner, K., Wacker, U. (2015). Slight pressure imbalances can affect accuracy and precision of dual inlet-based clumped isotope analysis. *Isotopes in Environmental and Health Studies*, 52, 12-28.
- *My contribution*: development and measurement of new standards for this clumped isotope method paper, interpretation of the data and contribution to the writing of the manuscript.
- Lüdecke, T.**, Thiemeyer, H. (2013). Palaeoenvironmental Characteristics of the Plio-Pleistocene Chiwondo and Chitimwe Beds (N-Malawi). In: Runge, J. *Palaeoecology of Africa Vol. 32: An International Yearbook of Landscape Evolution and Palaeoenvironments*, 143-161.
- Lüdecke, T.**, Mikes, T., Rojay, B., Cosca, M.A., Mulch, A., (2013). Stable isotope-based reconstruction of Oligo-Miocene paleoenvironment and paleohydrology of Central Anatolian lake basins (Turkey). *Turkish Journal of Earth Sciences*, 22, 793-819.

FIRST AUTHOR CONTRIBUTIONS AT INTERNATIONAL CONFERENCES

- 2020 ***Society of Vertebrate Paleontology (SVP)**, Virtual Conference
- 2019 ***East African Association of Paleoanthropology and Paleontology (EAAPP)**, Ethiopia
Nairobi, Kenya
- 2018 ***European Society for the Study of Human Evolution (ESHE)**, Liège, Belgium,
****European Society for the Study of Human Evolution (ESHE)**, Faro, Portugal,
Abstract#69
- 2017 ***East African Association of Paleoanthropology and Paleontology (EAAPP)**, Addis Ababa,
Ethiopia
***AnalytiX-2017**, BIT's 5th Annual Congress of AnalytiX, Fukuoka, Japan
- 2016 ***100+25 years of *Homo erectus*: Dmanisi and beyond**, International Senckenberg
Conference, Tbilisi, Georgia
***International Geological Congress (IGC)**; Cape Town, South Africa, Abstract# 2047
- 2015 ***Geological Society of America (GSA)**, Annual Meeting, Baltimore, MA, USA, Abstract#
102-8
***International Association of Sedimentologists (IAS)**, 31st Meeting of Sedimentology,
Kraków, Poland, Abstract# SS23b.01
***The Role of Culture in Early Expansions of Humans (ROCEEH)**, Expansions 2015,
Frankfurt, Germany
- 2014 ***Geological Society of America (GSA)**, Annual Meeting, Vancouver, Canada, Abstract# 292
***European Geophysical Union (EGU)**, Annual Assembly, Vienna, Austria, Abstract#
EGU2014-12168
***Deutsche Gesellschaft für Geowissenschaften (DGG)** "Geo-Frankfurt", Frankfurt,
Germany, Abstract: SDGG 85, page 252
- 2013 ***American Geophysical Union (AGU)**, Fall Meeting, San Francisco, CA, USA, Abstract#
PP24A-02
***European Geophysical Union (EGU)**, Annual Assembly, Vienna, Austria, Abstract#
EGU2013-4616
- 2011 ****DGG-GV "Fragile Earth"**, Munich, Germany, Abstract# 41-6. **Winner of student poster
award**

*talk, **poster

Mainz, February 2021