

DR. MAUD J.M. MEIJERS – Short CV

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RESEARCH PROFILE

As a geoscientist with an interdisciplinary background and extensive field work experience, I use stable isotope geochemistry to quantify Earth surface processes by reconstructing paleotopography and continental paleoenvironments (vegetation, climate, seasonality, hydrology, lake connectivity, and water/sediment fluxes). By combining magnetostratigraphy and $^{40}\text{Ar}/^{39}\text{Ar}$ dating, I establish a chronological framework; one of the prerequisites for understanding the timing and rates of geological events and processes. Ultimately, I strive to comprehend the drivers, interactions and feedbacks between Earth surface processes and tectonics, as well as their effects on regional biodiversity.

ACADEMIC APPOINTMENTS

Since 2016 *Postdoctoral Researcher*

Senckenberg Biodiversity and Climate Research Centre (SBIK-F), Frankfurt, Germany

Geology / Earth Surface Processes

Paleoclimate and Paleoenvironmental Dynamics Research Group

2012 – 2015 *Postdoctoral Researcher*

University of Minnesota, USA

NSF Continental Dynamics-Central Anatolian Tectonics project

Structure, Tectonics and Metamorphic Petrology (STAMP) Research Group

and Institute for Rock Magnetism (IRM)

2010 – 2012 *Henri Poincaré Postdoctoral Fellow*

Géozur, Observatoire de la Côte d'Azur, Université de Nice-Sophia Antipolis, France

Paleomagnetism of the South Armenian Block and its foreland: constraints on

Tethyan plate reconstructions and oroclinal bending during the Phanerozoic

Orogen Dynamics: Transfer and Coupling Research Group

EDUCATIONAL BACKGROUND

2006 – 2010 *PhD, Utrecht University, Netherlands*

Paleomagnetic Laboratory 'Fort Hoofddijk'

and Tectonics and Structural Geology Group (Vrije Universiteit Amsterdam)

Title: Tethyan evolution of the Black Sea region since the Paleozoic: a

paleomagnetic approach

Prof. Dr. Cor Langereis, Prof. Dr. Douwe van Hinsbergen (Utrecht University),

Prof. Dr. Randell Stephenson, Prof. Dr. Sierd Cloetingh (Vrije Universiteit

Amsterdam)

Last updated: January 2021

- 2002 – 2005 *MSc, Utrecht University, Netherlands*
Paleomagnetic Laboratory 'Fort Hoofddijk'
Title: Mesozoic paleomagnetic data from North Dobrogea (Romania) and Crimea (Ukraine): Cimmerian deformation phases along the southern margin of the East European Platform.'
Prof. Dr. Cor Langereis
- 1999 – 2002 *BSc, Utrecht University, Netherlands*
High Pressure and Temperature Laboratory
Title: Fault healing and sealing in sedimentary rocks: one-dimensional compaction experiments on calcite under room temperature and low stress conditions
Prof. Dr. Chris Spiers
- 1993 – 1999 *Serviam College Sittard, Netherlands*
Preparatory scientific education (Atheneum)

TEACHING EXPERIENCE

- since 2018 Designing and teaching MSc course 'Paleoenvironmental reconstructions in continental settings' with Dr. Iuliana Vasiliev; Goethe-University Frankfurt (2 hours/week, one semester per year)
- 2018 – 2019 Substituting class 'Effects of tectonics and climate on the morphological evolution of orogens' for Prof. Dr. Andreas Mulch; Goethe-University Frankfurt
- 2014 Seminar for undergraduate students: Paleomagnetism as a tool to reconstruct the large-scale geometry of Turkish orogens; Carleton College (Minnesota, USA)
- 2011 'Presenting in English' for French 3rd year BSc students; Université de Nice-Sophia Antipolis (1 hour/week, one semester)
- 2006 – 2008 Field training (mapping course) for first year BSc students. Four weeks per year in Spain (Vrije Universiteit Amsterdam, 2006-2007, foreland of the Betic Cordillera; Utrecht University, 2008, Iberian Chain)
- 2002 – 2005 Teaching assistantships for geology students: 1st year BSc Mathematics course, 2nd year BSc Structural Geology & Petrology course, 1st year BSc Introduction to Geophysics course, 1st year Excursion to the Belgian Ardennes, Preparatory course for 1st year BSc field work in Spain; Utrecht University

STUDENT SUPERVISION

- 2013 Noah Keller, undergraduate student, NSF Continental Dynamics-Central Anatolian Tectonics project, University of Minnesota
- 2012 Renzo Degenaar, MSc student co-supervised with Prof. Dr. Cor Langereis, project entitled: 'Oroclinal bending in the Lesser Caucasus', Utrecht University
- 2011 Marily Mensink, co-supervised with Prof. Dr. Cor Langereis, BSc thesis entitled: 'A paleomagnetic study on the South Armenian Block: The rotation since and the paleolatitude in Santonian time', Utrecht University
- 2007 – 2010 Paleomagnetic field, laboratory, and data analysis training of PhD students (Côme Lefebvre, PhD 2011; Ahmet Peynircioğlu, unfinished), Utrecht University
- 2007 Maartje H.F. Hamers, co-supervised with Prof. Dr. Cor Langereis, MSc thesis entitled: 'A new late Paleozoic Apparent Polar Wander Path for Baltica', Utrecht University

GRANTS

- 2020 German Science Foundation (DFG), Reconstructing eastward propagation of surface uplift in the Alps: integrating stable isotope palaeoaltimetry and palaeoclimate modelling. Co-PI with Dr. Mutz, Prof. Ehlers, Ph.D. (University of Tübingen), Prof. Dr. Mulch (SBIK-F). Includes one PhD student per institute. Grand total: ~€ 400,000
- 2012 ISES Postdoctoral Fellowship, Paleomagnetic Laboratory 'Fort Hoofddijk', Utrecht University. Co-PI with Prof. Dr. Cor Langereis: € 200,000
- 2012 Institute for Rock Magnetism, University of Minnesota, 'Visiting research fellowship': \$ 3,000
- 2012 'Darius Programme' (oil company consortium), for field work and analyses: € 9,000
- 2011 'Darius Programme', for field work and analyses: € 9,000
- 2011 Géoazur/Observatoire de la Côte d'Azur, for field work and analyses: € 2,500
- 2010 Observatoire de la Côte d'Azur two-year 'Henri Poincaré Postdoctoral Fellowship' (PI): € 60,000
- 2004 'Molengraaff fonds' for MSc field work in Ukraine and Romania: € 1,000

FIELD EXPERIENCE total ~84 weeks

I led (50.5 weeks), participated in (18 weeks) and supervised (15.5 weeks) field trips in Armenia (6 weeks), Azerbaijan (1.5 weeks), Belgium (1.5 weeks), Georgia (3.5 weeks), Greece (0.3 weeks), Romania (2 weeks), Russia (3 weeks), Spain (28 weeks), Turkey (32 weeks), Ukraine (6 weeks). Mapping, cross-sections, stratigraphic logging, sampling for: stable isotopes (bulk rock, soil nodules, fossil mammal tooth enamel in field lab), paleomagnetism, $^{40}\text{Ar}/^{39}\text{Ar}$ dating

LABORATORY EXPERIENCE

Inorganic stable isotope geochemistry

Joint Goethe University – Senckenberg BiK-F Stable Isotope Facility, Frankfurt

$\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ on carbonate-bearing sedimentary rocks / soil, fossil mammal tooth enamel

δD on clays and micas, δD and $\delta^{18}\text{O}$ on water

Paleomagnetism and rock magnetism

Paleomagnetic laboratory 'Fort Hoofddijk', Utrecht University

Institute for Rock Magnetism (IRM), University of Minnesota

Thermal and AF demagnetization, IRM / ARM acquisition and demagnetization,

MPMS, kappa bridges, Curie balance, Magnon, VSM

Argon geochronology

Argon Geochronology Laboratory, Vrije Universiteit Amsterdam

Mineral separation and $^{40}\text{Ar}/^{39}\text{Ar}$ analysis

ACADEMIC ACTIVITIES

PhD Committees

October 2018, Member of the reading committee and opposition for the PhD thesis of Derya Gürer, Utrecht University, Netherlands (now The University of Queensland, Australia)

Reviewer for Scientific Journals

Geology, Geophysical Journal International, Geochemistry Geophysics Geosystems, Geological Journal, GSA Bulletin, International Journal of Earth Sciences, Journal of Geodynamics, Tectonics, Tectonophysics, Turkish Journal of Earth Sciences

Last updated: January 2021

Organization of Scientific Meetings

2014, 2016 Co-organizer of the biennial three-day NSF Continental Dynamics Central Anatolian Tectonics (CD-CAT) project workshop in Cappadocia (Turkey) for ca. 30 scientists. Program, logistics and communication.

Other

Since 2020 Organization of TS session 'Orogenic plateaus and plateau margins' at the EGU General Assembly (online format), Vienna, Austria

2020 Organization of session 3.3 'Tectonics, geodynamics, and paleogeography of the Alpine-Himalayan orogen from the Earth's mantle to its surface' at DGGV GeoUtrecht 2020 (online format), Utrecht, Netherlands

2014, 2015 Maintenance of the NSF CD-CAT project website

2015 Organization of session TS6.8 'Formation, structure and morphology of mountain belts and orogenic plateaus: lithospheric processes from deep to shallow' at the EGU General Assembly

LANGUAGES

Dutch native, English fluent, German very good, French very good

MAIN PROJECT COLLABORATORS (alphabetically ordered)

Since 2020 *Reconstructing Eastward Propagation of Surface Uplift in the European Alps*

Todd Ehlers, University of Tübingen, Tübingen, Germany

Katharina Methner, Stanford University, Stanford, USA

Andreas Mulch, Senckenberg BiK-F, Frankfurt, Germany (postdoc advisor)

Sebastian Mutz, University of Tübingen, Tübingen, Germany

Since 2018 *Neogene ecosystems of the present-day Central Anatolian Plateau (CAP)*

Okşan Başoğlu, Gazi University, Ankara, Turkey

Ferhat Kaya, University of Helsinki, Helsinki, Finland

Cesur Pehlevan, Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey

Since 2017 *Mountain uplift and biodiversity in Anatolia*

Susanne Fritz, Senckenberg BiK-F, Frankfurt, Germany

Shan Huang, Senckenberg BiK-F, Frankfurt, Germany

Andreas Mulch, Senckenberg BiK-F, Frankfurt, Germany (postdoc advisor)

Since 2012 *Neogene paleoaltimetry and paleoenvironment of Anatolia*

Gilles Brocard, now Université de Lyon 2, Lyon, France

Nuretdin Kaymakçı, Middle East Technical University, Ankara, Turkey

Andreas Mulch, Senckenberg BiK-F, Frankfurt, Germany (postdoc advisor)

Christian Teyssier, University of Minnesota, Minneapolis, USA

Donna Whitney, University of Minnesota, Minneapolis, USA (postdoc advisor)

Since 2012 *Geochronology of the Central Anatolian Plateau*

Michael Cosca, USGS, Denver, USA

Joshua Feinberg, University of Minnesota, Minneapolis, USA

Cor Langereis, Utrecht University, Utrecht, Netherlands

2006 – 2013 *Plate tectonic reconstructions and the restoration of the geometries of mountain belts in the greater Black Sea region*

Shota Adamia, Javakhishvili Tbilisi State University, Tbilisi, Georgia

Demir Altıner, Middle East Technical University, Ankara, Turkey

Ara Avagyan, National Academy of Sciences of Armenia, Yerevan, Armenia
Gareth Davies, Vrije Universiteit Amsterdam, Netherlands
Mark Dekkers, Utrecht University, Netherlands
Douwe van Hinsbergen, now Utrecht University, Netherlands
Jean-Claude Hippolyte, CNRS, Université Aix-Marseille III, Aix-en-Pce, France
Nuretdin Kaymakçı, Middle East Technical University, Ankara, Turkey
Klaudia Kuiper, now Vrije Universiteit Amsterdam, Netherlands
Cor Langereis, Utrecht University, Netherlands
Yann Rolland, now Université Savoie - Mont Blanc, Chambéry, France (postdoc advisor)
Nino Sadradze, now Javakhishvili Tbilisi State University, Tbilisi, Georgia
Aline Saintot, now Ruhr University Bochum, Bochum, Germany
Brigitte Smith, CNRS, Université Montpellier 2, Montpellier, France
Marc Sosson, Université de Nice – Sophia Antipolis, Valbonne, France (postdoc advisor)
Randell Stephenson, now University of Aberdeen, Aberdeen, Scotland

SELECTED PRESENTATIONS

Selected invited oral presentations

7. **Meijers, M.J.M.**, 2020. From mantle to mammals: quantifying Earth surface processes from the terrestrial sedimentary record, University of Münster, *invited speaker*
6. **Meijers, M.J.M.**, 2019. Continental central Anatolian ecosystem and drainage evolution during Mio-Pliocene surface uplift, International Earth Science Colloquium on the Aegean Region (IESCA) 2019, Izmir, Turkey, *invited keynote speaker*
5. **Meijers, M.J.M.**, 2017. Late Miocene to Pliocene paleoenvironment and surface uplift of the Central Anatolian Plateau and its southern margin (Turkey), Symposium, Utrecht University, *invited speaker*
4. **Meijers, M.J.M.**, 2017. Rapid Late Miocene Surface Uplift of the Central Anatolian Plateau Margin (Turkey), Colloquium Göttingen University, *invited speaker*
3. **Meijers, M.J.M.**, 2014. Paleomagnetism as a tool to reconstruct the large-scale geometry of Turkish orogens, Carleton College, Northfield, MN, *invited seminar speaker*
2. **Meijers, M.J.M.**, Lefebvre, C.J.C, Kaymakçı, N., van Hinsbergen, D.J.J., Langereis, C.G., Peynircioğlu, A., Stephenson, R.A., Hippolyte, J.-C., 2013. Paleomagnetism as a tool to reconstruct the large-scale geometry of Turkish orogens, 50th Anniversary of Earth Sciences at the Middle East Technical University, Ankara, *invited speaker*
1. **Meijers, M.J.M.**, Langereis, C.G., Kaymakçı, N., van Hinsbergen, D.J.J., Saintot, A., Wijbrans, J., Stephenson, R.A., Vrouwe, B., Davies, G., Matenco, L., 2010. Jurassic-Cretaceous evolution of the circum-Black Sea region: Paleomagnetic studies in the Pontides/Taurides (Turkey) and Crimea (Ukraine), Université de Nice – Sophia Antipolis, Nice, *invited speaker*

PUBLICATIONS

Google Scholar: <https://scholar.google.com/citations?user=zW2DS9kAAAAJ&hl=en>