

# Dr. RICARDA DZIADEK

## CONTACT

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**Date of birth:** 16.01.1988  
**Nationality:** German  
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## EDUCATION

- Ph.D. 2014 - 2018** | **University of Bremen and Alfred Wegener Institute Helmholtz Center for Polar and Marine Research, Geophysics Department, Bremerhaven, Germany**  
Dissertation: *“Geothermal heat flow in the Amundsen Sea Embayment of West Antarctica”*  
Advisors: PD Dr. Karsten Gohl (AWI) and Prof. Dr. Christian Hübscher (University of Hamburg)  
Collaborators: Dr. Fausto Ferraccioli (BAS), Dr. Norbert Kaul (University of Bremen)
- M.Sc. 2010 - 2014** | **University of Bremen and MARUM, Germany**  
Master of Marine Geosciences (Geophysics, Geotechnics and Sedimentology)  
Thesis: *“Drained and undrained shear strength characteristics of reconstituted biosiliceous sediments”*  
Advisor: Prof. Dr. Achim Kopf (MARUM) and Prof. Dr. Gerhard Bohrmann
- B.Sc. 2007 - 2010** | **University of Bremen, Germany**  
Bachelor of Geosciences (Geophysics and Sedimentology)  
Thesis: *“Comparative measurements of two ocean bottom tiltmeter at the top of the Bremen droptower”*  
Advisor: Prof. Dr. Heinrich Villinger

## SUMMARY

- Postdoctoral scientist at the Alfred Wegener Institute (AWI), Germany
- Studies geothermal heat flow in Antarctica and the Arctic
- 3 peer-reviewed publications, several others on preparation
- Teaching experience: Numerical modelling with MATLAB and marine geophysical methods in the classroom and field
- Fieldwork in Antarctica during 3 seagoing expeditions
- Postdoc representative at AWI

## RESEARCH INTERESTS

- Magnetic Anomalies: The use of magnetic data to investigate crustal structures and Curie depths
- Geothermal heat flow: Thermal modelling of the crust based on Curie depths
- In-situ thermal methods to derive heat flow
- Structure and evolution of the West Antarctic Rift System
- Temperature distribution at slow-spreading mid-ocean ridges

## EMPLOYMENT HISTORY

10/2018 – pres.	<b>Alfred Wegener Institute (AWI), Germany</b> Postdoctoral Geophysicist <ul style="list-style-type: none"><li>• Conducting in-situ temperature measurements in Antarctica to estimate geothermal heat flow</li><li>• Processing and analysing magnetic anomaly data in West Antarctica</li><li>• Curie depth estimation in West Antarctica and Gakkel Ridge, Arctic</li></ul>
2015 - 2016	<b>University of Bremen, Germany</b> Research Assistant/Lecturer
2013 – 2014	<b>MARUM, University of Bremen, Germany</b> Marine Geotechnics Student Assistant
5 - 6/2013	<b>FIELAX, Bremerhaven, Germany</b> Exploration geophysicist for geothermal heat flow Fieldwork offshore Denmark
8 – 9/2012	<b>FIELAX, Bremerhaven, Germany</b> Exploration geophysicist for geothermal heat flow Fieldwork offshore West Africa
3 - 8/2011	<b>Universidad Católica de Valparaiso, Chile</b> Institute for Fisheries and Oceanography Student Assistant
7 – 8/2009	<b>Terratec – Geophysical Services, Freiburg, Germany</b> Geophysics intern for borehole logging
2008 - 2014	<b>University of Bremen, Germany</b> Marine technology and sensors Student assistant

## PUBLICATIONS

2017	<b>Dziadek, R.</b> , K. Gohl, A. Diehl, and N. Kaul, Geothermal heat flux in the Amundsen Sea sector of West Antarctica: New insights from temperature measurements, depth to the bottom of the magnetic source estimation, and thermal modeling, <i>Geochemistry, Geophys. Geosystems</i> , 2, doi:10.1002/2016GC006755.
2017	Wiemer, G., <b>R. Dziadek</b> , and A. Kopf, The enigmatic consolidation of diatomaceous sediment, <i>Marine Geology</i> , 385, doi:/10.1016/j.margeo.2017.01.006
2019	<b>Dziadek, R.</b> , K. Gohl, and N. Kaul, Elevated geothermal surface heat flow in the Amundsen Sea Embayment, West Antarctica, <i>Earth and Planetary Science Letters</i> , 506, 10.1016/j.epsl.2018.11.003
In prep.	<b>Dziadek, R.</b> , F. Ferraccioli, and K. Gohl, High lithospheric flexural response of the crust beneath the West Antarctic Ice Sheet – indications from $T_e$ inversions and DBMS estimates

## CONFERENCE PRESENTATIONS AND CONVENING

Talks:	“GHF inferred from in-situ temperature measurements in the Amundsen Sea, West Antarctica”, TACTical Workshop, Hobart, Australia, 21 March 2018 - 23 March 2018. “Linking GHF to crustal structures and DBMS estimates in the Amundsen Sea Sector”,
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TACTical Workshop, Hobart, Australia, 21 March 2018 - 23 March 2018.

**“Geothermal heat flux derived from airborne magnetic grids and measured temperature gradients in the Amundsen Sea sector of West Antarctica”**, 27th International Polar Conference, Rostock, 25 March 2018 - 29 March 2018.

**“The extent of the West Antarctic Rift System into the Amundsen Sea Embayment: New indications by Curie depth estimates and geothermal gradients”**, XXII International Symposium on Antarctic Earth Sciences, Goa, India, 13 July 2015 - 17 July 2015.

**Posters:** Over 10 scientific research posters presented at various conferences across Europe, North America, Asia and Australia.

**Session convener:** **XIII International Symposium on Antarctic Earth Science (ISAES)** 22-26 July 2019, Incheon, Republic of Korea, Antarctic geothermal heat flux.  
**AGU 2019 Fall Meeting**, 2019, San Francisco, USA, Investigating the Feedbacks between Solid Earth Properties and the Cryosphere.  
**SCAR Open Science Conference**, 2020, Hobart, Australia, Ice sheet-solid earth interactions: GIA, landscape evolution and geothermal heat flux (coming up).

## GRANTS AND AWARDS

**Travel grants:** SCAR Travel Grant (\$1400) - XIII International Symposium on Antarctic Earth Science (2019)  
DAAD Conference Travel Grant (\$1300) - XIII International Symposium on Antarctic Earth Science (2019)

**Awards:** Best talk at AWI Science Meeting 2018

## TEACHING AND SUPERVISION

**Teaching:** Extra-curricular course (M.Sc.): Advanced programming with MATLAB, Department of Geosciences, University of Bremen, Germany (2018)  
Introduction into programming with MATLAB and numerical modelling (B.Sc.), Department of Geosciences, University of Bremen, Germany (2015 – 2016)  
Marine geophysical methods with RV ALKOR (B.Sc., M.Sc.), Department of Geosciences, University of Bremen, Germany (2015 – 2016)  
Introduction geo-electrical methods (B.Sc.), Department of Geosciences, University of Bremen, Germany (2015)

**(Co)-Supervision:** Marie Harbott (M.Sc Student), Master Project: Heat flux, seasonal variations water masses, seismic water column imaging, connection between temperature and short term oceanographic changes, RV ALKOR Geophysical Survey (2016)  
Gino Freilinghaus (M.Sc. Student), Project: Heat flux measurements in the Baltic Sea, RV ALKOR Geophysical Survey, Department of Geosciences, University of Bremen, Germany (2015)  
Kai-Frederik Lenz (B.Sc. Student), Project: Heat flux measurements in the Baltic Sea, RV ALKOR Geophysical Survey, Department of Geosciences, University of Bremen, Germany (2015)

## ADDITIONAL SKILLS

**Field Work:** RV Polarstern Expedition PS118, 2019, Weddell Sea, Antarctica  
RV Polarstern Expedition PS104, 2017, Amundsen Sea, West Antarctica  
RV Sonne Expedition SO246, 2016, Chatham Rise, New Zealand  
RV Alkor, 2016, Baltic Sea, Germany  
RV Alkor, 2015, Baltic Sea, Germany  
RV Polarstern Expedition ANTXXIX, 2013, Scotia Sea  
RV L'Atalante Expedition MOMAR/D, 2010, Mid-atlantic Ridge  
RV Sonne Expedition SO206, 2010, Guatemala Basin, Costa Rica

<b>Collaborations:</b>	Yasmina Martos (NASA) & Manuel Catalan (Geophysics department, Real Instituto y Observatorio de la Armada, Spain), Lithospheric and geodynamic structure of Powell-Drake-Bransfield Rift (ELGeoPowerR).
<b>Media, Communication and Outreach:</b>	<p>“The role of Antarctica for global climate and scientific challenges”, Talk 12th grade, ev. Ratsgymnasium Erfurt, Germany (2017)</p> <p>“The role of Antarctica for global climate and scientific challenges”, Talk 11th grade, ev. Ratsgymnasium Erfurt, Germany (2017)</p> <p>&gt;15 Projects and presentations, Topic: Marine environment conservation, several schools in Bremen and Lower Saxony, Germany (2014-2017)</p> <p>Panel Discussion - Marine Mining, Environmental Awareness Week at Jacobs University, Bremen, Germany (2015)</p> <p>“Studying geosciences and job perspectives”, Talk 11th grade, ev. Ratsgymnasium Erfurt, Germany (2009)</p> <p>Bremen 4 Radio interview, Zebra4, Topic: What are Ice bergs?</p>
<b>Memberships:</b>	<p>Member of German Society for Polar Science (DGP)</p> <p>Member of international Erich Fromm Society</p> <p>Member of Scientific Committee on Antarctic Research, Actiongroup Geothermal Heat Flux</p>
<b>Reviewer:</b>	Journal of Geophysical Research - Solid Earth
<b>Computing:</b>	<p>Geosoft, MATLAB and Python for data processing and modelling</p> <p>Advanced use of GMT, QGIS, ILLUSTRATOR for mapping and plotting</p> <p>Proficient use of MS Office Software, LaTeX documentation formatting software and Agisoft Metashape for photogrammetric processing</p>
<b>Language:</b>	<p>German: Native speaker</p> <p>English: C2 Level</p> <p>Spanish: Fluent</p> <p>French: Beginner</p>
<b>Drivers license:</b>	Car/Motorcycle

## PERSONAL INTERESTS AND VOLUNTEERING

<b>Recreation and Sport:</b>	<p>I explore the world by car, motorcycle, foot or boat. In particular, I enjoy sailing with antique ships and spent 6 months as a crew member on board a sailing ship in the Caribbean, which transports around-the-world motorcyclists between Panama and Colombia and occasionally Cuba and Jamaica.</p> <p>I have travelled for work and pleasure to the Americas, Africa, Europe, Asia, Antarctica and Australia and spent 3 years living and working in Chile, Colombia and Australia.</p>
<b>Volunteering:</b>	<p>Expedition 81°N: helping in the preparational phase to sail the oldest german Polar RV <i>Grönland</i> towards Svalbard</p> <p>Sea Shepherd Conservation Society: I spent two years teaching children about marine ecosystems and environmental conservation, organising short sea-going campaigns and beach clean ups.</p>