

Pronouns: they/he | Contact: ben.cala@nioz.nl | [ORCID](#)

## EDUCATION

- since 02/2022 **PhD student in Earth Sciences**, NIOZ Royal Netherlands Institute for Sea Research & Utrecht University
- 10/2020 – 09/2021 **MPhil in Chemistry**, University of Cambridge, Magdalene College
- 10/2016 – 02/2020 **B. Sc. in Chemistry**, Eberhard Karls University of Tübingen

## RESEARCH EXPERIENCE

- since 02/2022 **PhD student**, NIOZ-UU, advised by Dr. Matthew Humphreys, Dr. Mariette Wolthers and Dr. Olivier Sulpis
- Investigate beyond the known drivers of marine carbonate mineral dissolution to close the gap in the alkalinity budget
- 09/2021 – 01/2022 **Research assistant**, Centre for Atmospheric Science, University of Cambridge
- 10/2020 – 09/2021 **MPhil thesis**, Centre for Atmospheric Science, University of Cambridge supervised by Prof. Dr. Alex Archibald
- Worked with box models (BOXMOX) and global models (UKCA) to improve dimethyl sulfide oxidation chemistry
  - Statistical analysis / data visualisation of model results and comparison to atmospheric observations with Python
- 10/2019 – 12/2019 **B.Sc. thesis**, Eberhard Karls University of Tübingen with Prof. Dr. Reinhold Fink
- Developed new method to calculate  $^{31}\text{P}$ -NMR shielding tensors using *ab initio* calculations and molecular dynamics simulations
  - Gained experience with bash scripting, Python, and HPC
- 08/2018 – 12/2018 **UROPS** (Undergraduate Research Opportunity in Science), National University of Singapore with Ass. Prof. Dr. Rowan D. Young
- Optimized catalytic deoxygenation with Rh  $\text{PC}_{\text{Carbene}}\text{P}$  pincer complexes
  - Worked under air-free conditions (Schlenk technique and Glovebox)
  - Various analytical techniques, including GC-MS, NMR, and MS
- 08/2017 – 09/2017 **Undergraduate research assistant**, Max-Planck-Institut für Kohlenforschung with Prof. Dr. Tobias Ritter and Dr. Matthew Tredwell
- Organic synthesis techniques, analysis with NMR spectroscopy

## TEACHING EXPERIENCE

- 10/2020 – 06/2021 **Demonstrator**, Practical Course Part 1a Chemistry, University of Cambridge
- 04/2019 – 08/2020 **Teaching Assistant**, Physical Chemistry, Eberhard Karls University of Tübingen
- grading of lab reports, supervising experiments, conducting oral quizzes

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**RELEVANT SKILLS**

Computational	<ul style="list-style-type: none"><li>– Programming languages: proficient in <b>Python</b> (relevant packages: NumPy, Pandas, Matplotlib, SciPy, Xarray, Scikit-learn), beginner in <b>Java</b>, and <b>Fortran 90/95</b></li><li>– Working in an Linux environment and bash scripting,</li><li>– High Performance Computing</li><li>– Scientific software / models: BOXMOX, UKCA, ORCA, GROMACS, JOYCE</li></ul>
Experimental	<ul style="list-style-type: none"><li>– Air-free techniques: Glovebox and Schlenk line</li><li>– Marine Chemistry: VINDTA for alkalinity and DIC measurements, titration techniques</li><li>– Other analysis: NMR spectroscopy, gas chromatography, mass spectrometry</li></ul>
Languages	<p><b>German:</b> Native <b>English:</b> Proficient, IELTS: 8.0 (C2) <b>Hungarian:</b> Intermediate <b>Dutch:</b> Beginner (A1)</p>

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**TRAINING COURSES AND SUMMER SCHOOLS**

06/2022	<i>Best practices for biogeochemical ocean observation: instrumentation, operation, quality control</i> , observational training course by POGO in Oban, Scotland
11/2021	<i>Introduction to Fortan 90/95</i> , University of Cambridge
10/2021	<i>Practical Introduction to High-Performance Computing</i> , University of Cambridge
10/2019	<i>Solutions to the Scientific Crisis</i> , Fall School, Studienstiftung, in Augsburg
09/2019	<i>Future</i> , Summer School Studienstiftung, at St. John's College, Cambridge, UK <ul style="list-style-type: none"><li>– Working Group: <i>Hazardous Hope. An Environmental Historical Perspective on Toxins and Toxicity in the Global Twentieth Century</i></li></ul>
11/2018	<i>Understanding China</i> , Seminar Studienstiftung, in Beijing, China

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**SOCIAL COMMITMENT**

since 11/2022	<b>PhD Representative</b> for PhD students in the Department of Ocean Sciences at NIOZ
2019 - 2021	<b>Erasmus by Train e.V.</b> – aims to link the Erasmus and Interrail programme for a more sustainable and united Europe <ul style="list-style-type: none"><li>– Co-Founder, part of Social Media team</li></ul>
2018 - 2021	<b>Chief Editor</b> of <i>Achte Minute</i> , the Online-Magazine for German and International Debating (1600 monthly article views)