# **Biogeochemical Modelling**

Prof. Dr. Andreas Oschlies & Biogeochemical Modelling Group



**Research Division** Marine Biogeochemistry (FB2) Research Unit Biogeochemical Modelling (BM)

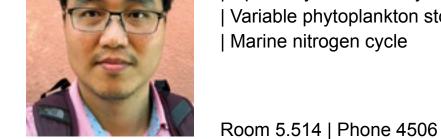


Andreas Oschlies Head of Biogeochemical Modelling Research Unit CDRmare / RETAKE / Global Ocean Oxygen Decade (GOOD) | Carbon dioxide removal | Ocean deoxygenation Room 5.502 | Phone 1936



Sandy Avrutin SEA02-CDR

Implementation and side effects of marine CDR | Observation strategies for measurement of CDR-related ocean carbon uptake



Chia-Te Chien DFG Eigene Stelle: FLEXIBLE

| Optimality-based ecosystem modelling | Variable phytoplankton stoichiometry | Marine nitrogen cycle

**Ivy Frenger Humboldt Tipping** | Ocean tracer transport and mixing | Ocean carbon, ocean heat, and climate Upwelling regions

Room 5.517 | Phone 1389



Julia Getzlaff CO<sub>2</sub>Meso Physical oceanographer with interest in | Mixing processes in numerical models | Earth system modelling | Large scale circulation

Room 5.516 | Phone 1418

### **Science Support**



Monika Peschke **Team Assistant** 

Room 5.503 Phone 4447 and 4467

Room 5.511





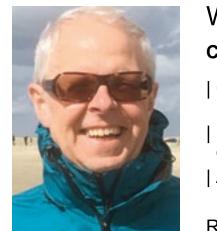
Room 5.523 | Phone 4242

Ulrike Bernitt

Kowledge Transfer

Coordination

/ CDRmare

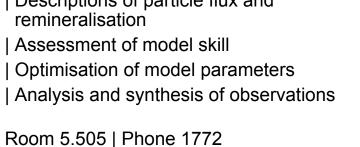


Wolfgang Koeve CDRmare: Test-ArtUp Global modelling of: BGC cycles (C, N, P, O<sub>2</sub>, CaČO<sub>3</sub>) Marine Canth-uptake and climate feedbacks Attribution studies

Room 5.509 | Phone 4255



Iris Kriest OceanICU / SCOR: WG161 ReMO Descriptions of particle flux and remineralisation Assessment of model skill | Optimisation of model parameters Analysis and synthesis of observations





Margarita Liadova CDRmare: sea4soCiety

| Model-based assessment of blue carbon CO<sub>2</sub>-removal approaches

Room 5.507 | Phone 1802



Neha Mehendale CDRmare: RETAKE

Modelling ocean alkalinity enhancement with FOCI (Flexible Ocean and Climate Infrastructure)



Room 5.511 | Phone 1854



Nadine Mengis Emmy Noether research group leader FOOTPRINTS / RESCUE / CDRmare: ASMASYS | Earth system modelling of a net-zero world Zero emissions (warming) commitment Global carbon budget Climate forcing footprints of carbon dioxide removal options Room 5.513 | Phone 4289

Markus Pahlow EMS FORE | Optimality-based modelling

> | Plankton biodiversity and evolution Biogeochemistry of plankton and dissolved organic matter

Room 5.510 | Phone 1907



Volkmar Sauerland OceanICU Optimization Methods and Model Calibration | Work with/on FOCI-MOPS

Room 5.506 | Phone 1977



Markus Schartau OceanNETs / BASS Assessment & parameter estimation of ecological- & biogeochemical models | Plankton size spectra analyses | Organic matter cycling in coastal & estuarine environments | Simulation of mesocosm experiments Room 5.504 | Phone 1983



Scientific and Knowledge Transfer Manager / OceanNETs

Room 5.523 | Phone 4140

Room 5.522 | Phone 1864



Sandra Ketelhake

Kowledge Transfer Manager / CDRmare



Steffen Swoboda **CDRatlas** | Process chain development



Giang Tran **COMFORT / RESCUE** 

Room 5.512 | Phone 2144

| Climate engineering assessment Probabilistic uncertainty and sensitivity analysis | Earth system modelling and perturbed parameter ensemble



Hao-wei Wey CDRterra: CDRSynTra

| Assessment of Earth system impacts across different CDR options



| Oxygen minimum zones Paleoceanography | Climate-biogeochemistry interactions Room 5.515 | Phone 2053

COMFORT / ISODEG

Nutrient isotope cycling

Tianfei Xue

of carbon dioxide removal approaches

a

| Assessment of side-effects, sustainability impacts, and political and socio-cultural feasibility of the CDR options

Room 5.514 | Phone 2367



Room 5.522 | Phone 1747



CUSCO / Humboldt Tipping Modelling plankton food web of Humboldt Upwelling system Investigating feedback of plankton change on marine biogeochemistry Coupling biogeochemical model with higher trophic level model Room 5.518 | Phone 2386

Wanxuan (Ben) Yao **CDRmare: ASMASYS** | Evaluation of marine based CDR options for Germany | Modelling in Iron cycle | Spatial ecology models | Network planning and optimisation Graphic design Room 5.514 | Phone 2389

Room 5.511 | Phone 2090

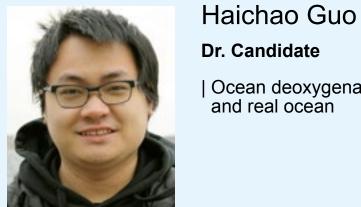


Tim Boxhammer Scientific Manager / CDRmare: RETAKE



Room 5.523 | Phone 1275

#### **Doctoral Candidates**

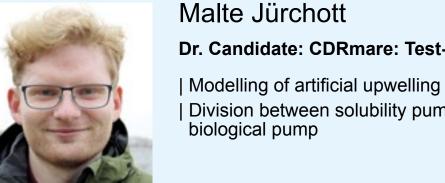


Dr. Candidate

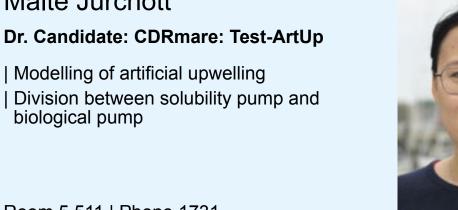
| Ocean deoxygenation in models

and real ocean

Room 5.511 | Phone 1467



Room 5.511 | Phone 1731



Na Li Dr. Candidate | Optimality-based modelling | Marine N cycle | DOM cycle

Room 5.514 | Phone 1799



Vanessa Lampe Affiliated Dr. Candidate

> | Plankton size spectra analyses | Size-based plankton modelling | Organic matter cycling in the Arctic

Room 5.511 | Phone 1785



Estela Monteiro Dr. Candidate: FOOTPRINTS

| Climate stabilization scenarios (net-zero and zero emissions commitment) | Role of different forcing agents, e.g. non-CO<sub>2</sub> greenhouse gases and land-use

Room 5.511 | Phone 1872



Physical Oceanographer interested in definig/quantifying the processes causing the OMZ in the northern Indian Ocean and how these are represented in coupled biogeochemical circulation models.



Rita Erven **Graphic Design** / CDRmare

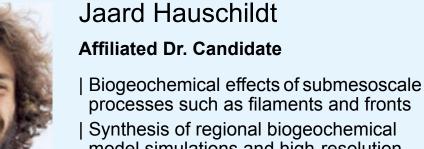
/ OceanNETs

Room 5.521 | Phone 1538

**Ben Perrett** Dr. Candidate







processes such as filaments and fronts Synthesis of regional biogeochemical model simulations and high-resolution observations in the Peru upwelling system

Room 5.511 | Phone 1507





Miriam Tivig Affiliated Dr. Candidate

| Earth system modelling (global models) | Modelling of biogeochemical land to ocean processes | Modelling of coastal biogeochemistry



Jiajun Wu Affiliated Dr. Candidate

| Modelling ocean-based CDR via offshore macroalgae cultivation and harvesting in the open oceans and
along the coastal shorelines | Coupling macroalgae growth model in global BGC model

#### Funding

**BMBF** | CDRmare (with Coordination) | CDRterra CO<sub>2</sub>Meso (with Coordination) | Humboldt Tipping | MicroARC

DFG | BASS | FOOTPRINTS | ISODEG Temporary Positions for PIs (»Eigene Stelle«)

EU	
	COMFORT
	OceanICU
	OceanNETs (with Coordination)
	RESCUE
	SEA02-CDR

HGF EMS-FORE | MarDATA **PoF IV** 

Topic 6.3

## HELMHOLTZ