

# Internships

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Students have been contributing to our salinisation projects for a long time now. Many different types of projects are possible, ranging from detailed numerical modelling to larger scale system analyses. Please find a list of currently [available topics](#) and [past internships](#) below.

## Available internship topics

INTEGRAL

[Contact: \[salinisation@deltares.nl\]\(mailto:salinisation@deltares.nl\)](#)

- Creating a map of salinisation world wide
- Mapping the impact of salinisation on health, ecology, and economy
- Working on an assessment framework for different measures

INFRA

[Contact:](#)

- <topic>

GROUND

[Contact: \[Gualbert.OudeEssink@deltares.nl\]\(mailto:Gualbert.OudeEssink@deltares.nl\)](#)

- The impact of salinisation in ground- and surface water on: a. health and b. agriculture and food production. One component is improving a global salinisation map with local models and data (e.g. Mekong delta)
- Simulating the effect of different scenarios on climate change/sea-level rise and anthropogenic stresses on fresh groundwater in the Mekong delta, using the existing 3D model
- On the water - food nexus in the Nile delta: communicating, understanding and monitoring groundwater availability, collaboration with the universities Kafr El Sheikh and Sadat City; also a visit to Egypt is planned.
- [Comparison of 2D and 3D groundwater flow and salinity model estimations in deltaic regions](#)
- [Assessing the economic and technic feasibility of offshore groundwater pumping](#)
- Assessing the effect of model parameters (e.g. solute solvers, grid convergence) on variable-density groundwater and salt transport benchmark cases using iMOD-SEAWAT and/or MODFLOW6
- Fresh groundwater resources management at a farmers level in the province of Zeeland, The Netherlands: setting up robust web-based clipping tools; a modelling study
- Assessing submarine groundwater discharge along coastal stretches: a global analysis
- Setting up a 3D variable-density groundwater flow model simulating salt water intrusion in a deltaic area: possible cases: the Bengal, Indus, Po, Yangtze, Pearl river deltas

SURFACE

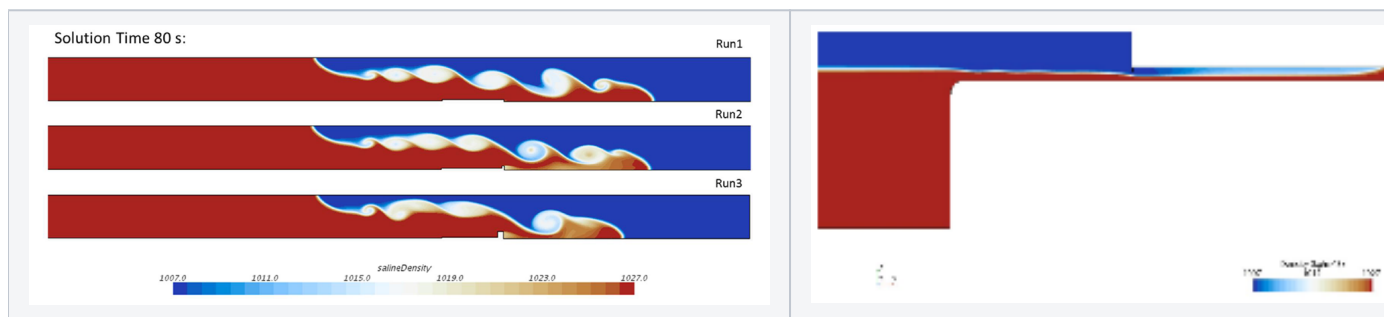
[Contact:](#)

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## Past internships

Quickly navigate to past internships within themes [infrastructure](#), [groundwater](#) or [surface water](#).

INFRA



[Lucero Avila Ruiz \(2022\)](#), Eindhoven University of Technology, "The flushing procedure in salt filled cavities".

[Sam Maijvis \(2022\)](#), Eindhoven University of Technology, "Numerical modelling of selective withdrawal for the mitigation of salt intrusion".

[Gijs Arts \(2021\)](#), Eindhoven University of Technology, "Predicting salt concentration by selective withdrawal of salt water through a salt screen".

[Arco van Beek \(2021\)](#), Eindhoven University of Technology, "The influence of a flushing discharge on lock-exchange".

[Noor ten Harmsen van der Beek \(2021\)](#), Delft University of Technology, "Mixing of salinity by ship traffic in canals".

Vaishnavi Duraisamy (2019), Eindhoven University of Technology, ["Numerical modelling and analysis of a bubble screen"](#).

Arthur Oldeman (2019), Eindhoven University of Technology, ["Numerical Modeling of Bubble Screens for Mitigating Salt Intrusion in Sea Locks"](#).

Vaishnavi Duraisamy (2018), Eindhoven University of Technology, "Bubble screen experimental data analysis".

Lina Nikolaidou (2018), Delft University of Technology, "Effectivity of a bubble screen as separator of water of different densities".

Laurens de Boer (2017), Hogeschool Rotterdam, "In welke mate kan optimalisatie van de schutoperatie bijdragen aan het beperken van zoutindringing door schutsluizen?".

[Annika Blom \(2015\)](#), RWTH Aachen University, "Validation and application of CFD for lock exchange currents in the Krammer yacht lock".

[Mike van Meerkerk \(2014\)](#), Delft University of Technology, "Modeling of a Bubble Curtain".

[Steven Kaptein \(2012\)](#), Bordeaux Institute of Technology, "Estimation of salt intrusion through locks".

GROUND



## 2023

- Mohammed M.F. Alkurd, IHE-Delft, [Paleo-hydrogeographical model for the Levant applying 3D supra-regional coastal groundwater modelling approach](#).

## 2022

- Aisyah F. Salsabila, IHE-Delft, [Global Vulnerability Mapping of Coastal Zones Prone to Saltwater Intrusion](#).

## 2021

- Thijs Hendriks, Utrecht University, [Numerical computation of hurricane-induced saltwater intrusion on fresh groundwater availability in peninsular Florida under different climate scenarios](#)

## 2020

- Verduijn, H., , Utrecht University, [Exploration of the Effects of Aquifer Storage and Recovery solutions on the Water Quality and Quantity in a sandy ridge system in Ben Tre , Vietnamese Mekong Delta, based on 3D Variable-Density Groundwater Modelling](#).
- Obeid, A.A.A., IHE-Delft, [Sensitivity analysis of variable-density groundwater models](#).
- Daoud, M.G.M., ITC Enschede, [Testing the variable-density module of MODFLOW6 on a case considering groundwater extraction in a fresh-saline groundwater environment in the province of Zeeland, The Netherlands](#).
- Bregman, S., WUR, [Viability of an alternative cropping system using shallow freshwater lenses in Tra Vinh and Ben Tre, Vietnam](#).
- Kruijt, A., Utrecht University, [FAME Fieldwork report, Internship report UU](#).
- Josh Shankel, Utrecht University, [Exploration of shallow sandy ridge systems for aquifer storage and recovery solutions in the Vietnamese Mekong Delta](#)
- Wouter Goofers, Utrecht University, [Paleo-hydrogeographic reconstruction of the groundwater salinity in the Ayeyarwady Delta, Myanmar, using a 3D variable-density groundwater model](#)

## 2019

- Eva Schoonderwoerd, Utrecht University, [Modelling density-dependent flow with the use of MODFLOW 6, The effect of spatial and temporal discretization](#)
- Romero Verastegui, Betsy D., IHE-Delft. [Comparison of different methodologies to estimate the freshwater-saltwater distribution in coastal aquifers](#)
- Lennart Brokx, Utrecht University, [Projecting the Effects of Saltwater Intrusion on the Fresh Groundwater Resources of Southeastern Louisiana and the New Orleans Area , USA , based on 3D Variable-Density Groundwater Modelling](#)

## 2018

- Lars Geitenbeek, Utrecht University, [Saline groundwater extraction as a measure to increase the freshwater availability; A case study for the western parts of the Netherlands](#)

- Romero Verastegui, Betsy D., IHE-Delft, [Generating variable-density groundwater benchmarks in 2D using iMOD-SEAWAT](#).
- Hendriks, N., Utrecht University, [Identifying the most important factors that determine fresh groundwater availability in deltaic areas](#)
- Hugo Hagendoorn, Delft University of Technology, [Measuring and modelling to optimise a salinity monitoring network for use in the optimal control of flushing: Case study: Lissertocht catchment](#)
- Colin Manz, University of Aachen, Germany, [Variable-density groundwater flow and coupled salt transport models of the Chao Phraya Delta, Thailand](#)
- Tobias Mulder, Utrecht University, [Constructing 3D variable-density groundwater flow models for six deltas using global data sets](#)

## 2017

- Wayangi Lakshani Weerasekera, IHE-Delft, [3D Variable-density Groundwater Modelling of the Red River Delta, Vietnam](#)

## 2016

- Lubna Badi, Utrecht University, BSc, [Securing freshwater supply with measures to diminish the effect of sea-level rise by climate change \(Literature review on state-of-art SWI research and a case study on SIDS in the Pacific\)](#)
- Björn Bolhuis, Utrecht University, [Developing an automated open source system for coastal multi-hazard assessment and management of water resources in a changing climate \(Based on the Coastal Hazard Wheel system\)](#)

## 2015

- Steven Ros, Utrecht University, The Nile Delta, Egypt: creating a fresh-salt water model
- Marjolein Vogels, Utrecht University, [Modelling the central coastal groundwater system of Bangladesh](#)

## 2014

- Jan Snel, Wageningen UR, [Oplossingen ten behoeve van zoetwatervoorziening voor de landbouw op Schouwen-Duiveland](#)
- Mieke Hulshof, Wageningen UR, [Spatial scales in salinity modeling, case Waterdunen, Zeeland \(Folkert Hellinga Award 2014\)](#)
- Daniel Zamrsky, Wageningen UR, [Coastal vulnerability to tsunami impacts and modelling SWI in aquifers situated in the most vulnerable areas](#)
- Carlos Rosado de Palacio, Utrecht University, [Water system analysis and numerical modelling of a coastal aquifer in western Mexico: a case study](#)

## 2013

- Marjan Sommeijer, WUR, [Identifying suitable locations for infiltration of fresh water in creek ridges](#)
- Thomas Boerman, UU, [Fresh water lenses under creek ridges: a pilot study in Zeeland to increase fresh water supply](#)
- Pieter Winters, Universteit Gent, Belgie, [Estimating flow patterns to an agricultural ditch by inverse modeling of temperature and salinity measurements](#)

## 2012

- Maitri Fischer, UU, [Managing freshwater lenses in a Dutch coastal setting - increasing freshwater availability by aquifer storage and recovery.](#)
- Martijn Visser, UU, [Aquifer storage and recovery in a fossil creek bed - managing droughts in a brackish environment](#)
- Irene Lugten, UU, [The effects of salt water intrusion from the Dintel into the surface and groundwater in the regio](#)
- Kyra Hu-A-Ng, UU, [Understanding Holocene coastal development and the resulting evolution of groundwater chloride distribution in the North-West coastal region of the Netherlands - a historical modelling approach](#)

## 2010

- Bernard Voortman, UU, [Invloed van gebiedseigenschappen en klimaatverandering op de dikte en vorm van regenwaterlenzen in de Provincie Zeeland en bijdrage aan Hydrol. Earth Syst. Sci., 15, 3659-3678](#)
- Aileen Mirasol-Robert, UU, [Analysis of Submarine Groundwater Discharge to Manila Bay - 3D Density Dependent Hydrogeological Modeling of the South-eastern coastal zone of Bataan, Philippines](#)
- Dagmar Schnitzer, UU, [Response of a fresh-brackish groundwater system to hydrological management in and around the Naardermeer wetland, the Netherlands](#)

## 2008

- Tommaso Letterio, Uni of Firenze, Italy

## 2007

- Bas de Veen en Sjors Stevens, VU, [Meetcampagne regenwaterlenzen in de Provincie Zeeland](#)
- Corne Prevo, Hogeschool Zeeland, Aquatische Ecotechnologie: [Regenwaterlenzen binnen de Provincie Zeeland](#)
- Francesco Sergi, La Sapienza, Roma, Italy, [Salinisation processes in the Province of Zeeland, the Netherlands, bijdrage aan Near Surface Geophysics, 401-412, 2007](#)
- Marian Koskamp, WUR, [Modelstudie naar chlorideconcentratie in bodemvocht en ondiep grondwater in een zout kwelsysteem, conceptverslag](#)
- Valentina Marconi, Uni of Bologna, Italy, [Characterization of shallow fresh groundwater lenses in the Province of Zeeland with 2D geo-electrical surveys](#)
- Vesna Tripkovic, UNESCO-IHE, [Salt water intrusion in The Province of Zeeland, the Netherlands - water system analysis and numerical modeling](#)

## 2006

- Elles Bader, VU, [Verziltings- en verzoetingsprocessen in Nederland; met speciale aandacht voor de Wieringermeerpolder](#)
- Piet Maljaars en Runa Wils, Hogeschool Larenstein, [Regenwaterlenzen in zoute kwelsystemen](#)

2005

- Beatrice Giambastiani, Uni of Bolgona, Italy, Saltwater intrusion and water management in the unconfined coastal aquifer of Ravenna (Italy): a numerical model [J. Hydrol. 340, 1-2, 91-104, 2007](#).

SURFACE

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