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- Slim Water Management, case Rijnland
- Innovatie in Perkpolder, peilbuizen beschermen grondwater tegen verzilting
- The Challenges of Saline Groundwater
- Zoetwater zelfvoorzienendheid, Deltaproof
- GO-FRESH: Ondergrondse waterbergingsproeven Proeftuin Zuidwestelijke Delta
- Kansrijke oplossingen voor een robuuste zoetwatervoorziening (Uitleg GO-FRESH 3 proeven, 4m20s)
- Kreekkrug Infiltratie Proef in bedrijf (2m39s)
- De effectiviteit van het doorspoelen van polders in Nederland
- De bronnen van verzilting, en de lange geschiedenis die eraan voorafgaat, case NL
- Nederland, een Landschap gevormd door Mens en Natuur

## Lecture Notes Density Dependent Groundwater Flow: Salt water intrusion in coastal aquifers

**Auteur:** Gualbert Oude Essink

**Dictaat:** [Density Dependent Groundwater Flow](#)

- 1 Introduction
- 2 Characteristics of a density dependent groundwater system
- 3 Freshwater head
- 4 The concept of a fresh-saline interface
- 5 Control of salt water intrusion
- 6 Numerical modelling
- 7 Salt water intrusion in the Netherlands
- 8 Heat transport in porous media: introduction



## Lecture Notes Groundwater Modelling

**Auteur:** Gualbert Oude Essink

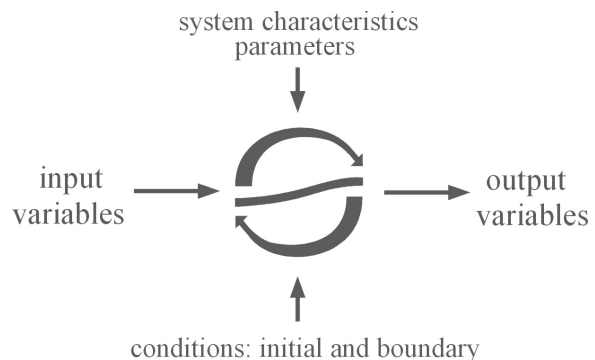
**Dictaat:** [Groundwater Modelling](#)

**PART I Modelling Protocol**

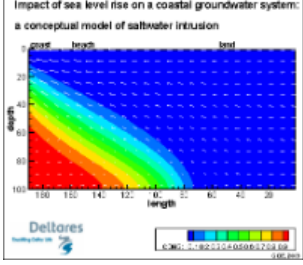
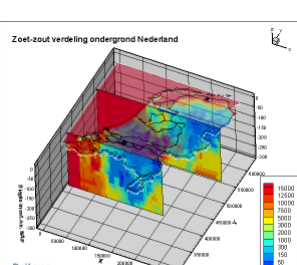
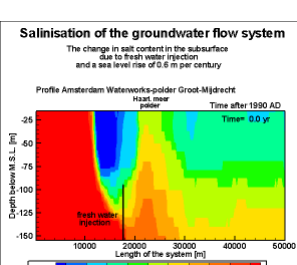
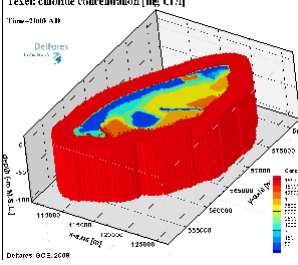
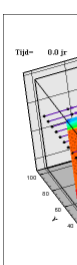
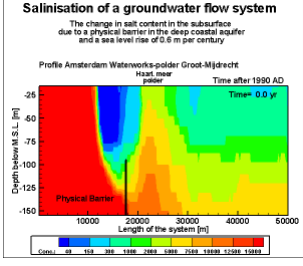
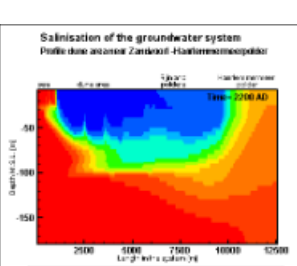
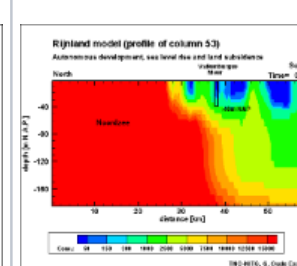
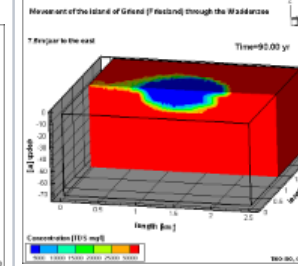
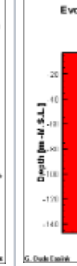
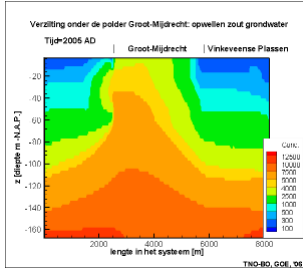
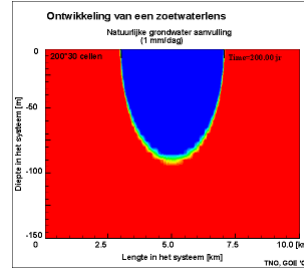
- 1 Introduction
- 2 Classification of mathematical models
- 3 Methodology of modelling
- 4 Data gathering

**PART II Groundwater Modelling**

- 5 Introduction
- 6 Mathematical description of hydrogeologic processes
- 7 Solution techniques
- 8 Numerical aspects of groundwater models
- 9 Some selected groundwater codes



Animations: examples of salinisation processes

<p><b>Henry's profile with sea level rise</b></p>	<p><b>3D zoet-zout verdeling ondergrond NL</b></p>	<p><b>Fresh water injection to combat salinisation</b></p>	<p><b>3D zoet-zout verdeling ondergrond Texel</b></p>	<p><b>Region partly c</b></p>
<p>Impact of sea level rise on a coastal groundwater system: a conceptual model of saltwater intrusion</p> 	<p>Zoet-zout verdeling ondergrond Nederland</p> 	<p>Salinisation of the groundwater flow system</p> <p>The change in salt content in the subsurface due to fresh water injection and a sea level rise of 0.6 m per century</p> <p>Profiel Amsterdam Waterworks-polder Groot-Mijdrecht</p> 	<p>Texel: chloride concentration [mg Cl<sup>-</sup>/l]</p> <p>Time=2100 AD</p> 	
<p>Henry's profile with sea level rise</p>	<p>3D zoet-zout verdeling ondergrond NL</p>	<p>Fresh water injection to combat salinisation</p>	<p>3D zoet-zout verdeling ondergrond Texel</p>	<p>Regional captured</p>
<p><b>Physical barrier in the coastal zone</b></p>	<p><b>Dutch profile: extraction, upconing and low inland levels</b></p>	<p><b>Profile over 3D model: effect sea level rise on salinisation</b></p>	<p><b>Movement of the island De Griend (NL): creation of a freshwater lens</b></p>	<p><b>Evo lens</b></p>
<p>Salinisation of a groundwater flow system</p> <p>The change in salt content in the subsurface due to a physical barrier in the deep coastal aquifer and a sea level rise of 0.6 m per century</p> <p>Profiel Amsterdam Waterworks-polder Groot-Mijdrecht</p> 	<p>Salinisation of the groundwater system</p> <p>Profiel de Amsterdamse Zandkolk-Haarlammesmeerpolder</p> 	<p>Rijland model (profile of column 53)</p> <p>Autonomous development, sea level rise and land subsidence</p> 	<p>Movement of the island of Griend (Friesland) through the Waddenzee</p> <p>Time=9500 yr</p> 	
<p>Physical barrier in the coastal zone</p>	<p>Dutch profile extraction, upconing and low inland levels</p>	<p>Profile over 3D model: effect sea level rise on salinisation</p>	<p>Movement of the island De Griend (NL): creation of a freshwater lens</p>	<p>Evo lens</p>
<p><b>Upconing saline groundwater under a low-lying area</b></p>	<p><b>Ontwikkeling van een zoetwaterlens</b></p>			
<p>Verziltting onder de polder Groot-Mijdrecht: opwelling zout grondwater</p> <p>Tijp=2005 AD   Groot-Mijdrecht   Vinkeveense Plassen</p> 	<p>Ontwikkeling van een zoetwaterlens</p> <p>Natuurlijke grondwateraanvulling (1 mm/dag)</p> 			
<p>Upconing saline groundwater under a low-lying area</p>	<p>Ontwikkeling van een zoetwaterlens</p>			