

# Ivo Pasmans

## Curriculum Vitae

*Mathematically well-versed oceanographer with in-depth knowledge of data assimilation and with extensive hands-on experience in the construction of complex observation operators, data assimilation in Galerkin models, the art of ensemble-based background error covariance estimation and MPI/OpenMP parallel Fortran coding.*

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### Education

- 2013-2019 **PhD in Ocean, Earth and Atmospheric Sciences**, *Oregon State University*, Corvallis, USA.  
Adding capabilities to assimilate subsurface observations to the ROMS-AVRORA data assimilation system for the ocean offshore Oregon-Washington, USA. Determine what the benefits are of combined assimilation of glider data and surface observations over the assimilation of either one by themselves. Develop the novel cluster-search method to efficiently run an ensemble of 4DVars (E4DVar) using limited HPC resources. Compare the accuracy of forecasts and analysis produced by the E4DVar with those from the current balance-operator based 4DVar data assimilation system.
- 2009-2011 **MSc in Meteorology, Physical Oceanography & Climate**, *Utrecht University*, Utrecht, Netherlands.  
Focus on tides, coastal morphology and (internal) waves. Thesis: Analysis and modelling of channels on the outer deltas
- 2005-2007, **BSc in Physics**, *Utrecht University*, Utrecht, Netherlands.  
2008-2009 Focus on theoretical physics and electromagnetic fields/waves. Thesis: Modelling jet-suppression by gluon bremsstrahlung in Au-Au collisions at  $\sqrt{s} = 200$  GeV using the multiple soft scattering approximation
- 2005-2007, **BSc in Mathematics**, *Utrecht University*, Utrecht, Netherlands.  
2008-2009 Focus on differential manifolds and analysis.
- 1999-2005 **Grammar school**, *Bernardinus College*, Heerlen, Netherlands.

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### Professional experience

- 2021-present **Postdoctoral Research Assistant**, *University of Reading*, Reading, UK.  
Develop data assimilation methods tailored to the characteristics of a discontinuous Galerkin sea-ice model as part of the Scale-Aware Sea Ice Project.
- 2019-2021 **Assistant Professor (Research)**, *University of New Orleans*, New Orleans, USA.  
Work on techniques to assimilate drifters as Lagrangian observations. Refactor code into object-oriented Fortran format.
- 2018 **Graduate Teaching Assistant**, *Oregon State University*, Corvallis, USA.  
Assist during the tutorial sessions of the course Math Camp.
- 2013-2018 **Graduate Research Assistant**, *Oregon State University*, Corvallis, USA.  
PhD research.
- 2011-2013 **Trainee**, *Arcadis Engineering*, Zwolle, Netherlands.  
Design, execute and report results of numerical model studies to predict the effects of human activities on hydrodynamics, sedimentation/erosion rates, algae concentrations and underwater sound levels. Other activities include the participation in a small maritime field campaigns and the development of an elementary underwater sound model.

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### Honors and Awards

- 2018 **Butler Family Award**, *College of Earth, Ocean and Atmospheric Sciences*, Corvallis, USA.  
2015 **Jacques Nihoul Poster Award**, *GHER Colloquium*, Liège, Belgium.

2015 **Wayne V. Burt Student Award**, *College of Earth, Ocean and Atmospheric Sciences*, Corvallis, USA.

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## Extracurricular

2019-present **Reviewer**, *Journal of Geophysical Research: Oceans, Ocean Modelling, Water Resources Research*.

2015-2017 **Student representative**, *CEOAS*, Corvallis, OR, USA.  
Student representative on several departmental committees (Graduate Student Committee/Graduate Program Committee/Safety Committee).

2016 **International High-Performance Computing Summer School**, *XSEDE*, Ljubljana, Slovenia.

Summer school covering parallel scientific computer programming on supercomputer clusters.

2014-2018 **Science Competition Volunteer**, *Salmon Bowl*, Corvallis, OR, USA.

Helping out at annual ocean sciences competition for high school students.

2012-2013 **JOP**, *Arcadis Engineering*, Arnhem, Netherlands.

Arcadis' trainee program focused on project management and business communication skills.

2012 **OpenDA course**, *Deltares*, Delft, Netherlands.

One day course on OpenDA, a generic tool for model calibration and Kalman filtering.

2010 **FOKUZ Summer School**, *NIOZ*, Texel, Netherlands.

Introduction to the empirical aspects of physical and biological oceanography.

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## Skills

### Programming.

Bash, GMake, C++ (basic), DAPPER, Fortran, Mathematica, Matlab, MPI, OpenACC, OpenMP, Python

### Software.

Delft3D, DELWAQ (basic), CentOS, Eclipse IDE, Firedrake, Git, L<sup>A</sup>T<sub>E</sub>X, LibreOffice, MS Office, PBS, ROMS, Slurm, SWAN, SVN, Ubuntu

### Languages.

Dutch (native), English (fluent), German (basic), French (basic)