

CV

Zhenwen Wan



Researcher turned IT developer

A self-employed algorithm expert specialized in CAE software development since 2017, having not only developed electromagnetic wave simulator EML and multi-physics simulator MySim based on open sources FreeCAD, Elmer and Gmsh, but also solely developed a mini 2D geometrical lib and a surface meshing lib in C++. A researcher specialized in ocean modelling 1996~2016, having developed and researched in DMI for 9 years and taught in Xiamen Univ. as associate professor. I am living in Denmark and developing remote CAE software projects.

Contact info

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Work experience

2019.04~ (remote work): Algorithm expert of Nanjing MySim Digital Technology, China.

- Development interests: CAE softwares.
- Products: the software MySim2021
- Experience: algorithms of solver, mesh and geometrical model.

2016.11-2018.10(remote work): Project manager and FEA expert, Beijing Leviathan

Technology Co., Ltd.

- Development interests: electromagnetic wave simulation software.
- Products: the software EML
- Experience: FEA, meshing and front-end programming

2007.12-2017.05: Research Scientist and marine ecosystem modeler, R & D Department, Danish Meteorological Institute, Denmark.

- Research interests: marine ecosystem modelling.
- Products: peer-reviewed research articles (five leading authored and many co-authored)
- Experience: High Performance Computation, Linux shells.

2004.04-2007.12: Associate Professor, marine environment modeler, State Key Lab of Marine Environmental Science, Xiamen Univ., China.

- Research interests: hydrodynamic modelling, biogeochemical modelling and inverse modelling.
- Products: peer-reviewed research articles (two leading authored and many co-authored).
- Experience: High Performance Computation, Linux shells, Artificial Intelligence.

2002.01-2004.01: Post-doc, biogeochemistry modeller, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA, USA.

- Research interests: stream ecosystem model development and stream ecosystem flow analysis.
- Products: peer-reviewed research articles.
- Experience: FEA, smart sensors, data loggers.

2001.11-2002.01: Visiting scientist, marine ecosystem modeller, International Arctic Research Center, Univ. of Alaska Fairbanks, USA.

Research interests: marine ecosystem model development and coupled physical-biogeochemistry ecosystem modelling.

1999.07-2001.11: Assistant Research Scientist, physical and marine ecological modeler, First Institute of Oceanography, SOA, China.

- Research interests: numerical modelling of circulations, marine ecosystem dynamics, coastal dynamics and tides in China Seas.
- Peer-reviewed research articles (five leading authored and many co-authored)

Education

1996 – 1999 Ph.D. in Physical Oceanography, the Institute of Oceanology, Chinese Academy of Sciences.

- Courses -- physical oceanography, ocean modelling, marine ecology

1993 – 1996 M.Sc. in Fluid mechanics, Nanjing University of Science and Technology.

- Courses -- structural and fluid mechanics, numerical modelling, FEA

1988 – 1992 B.Sc. in Physics, Jiangxi Normal University.

- Courses -- mechanics, thermodynamics, electronics, atomic physics

IT skills

OS: Windows, Unix/Linux, Mac

Language: Fortran, C/C++, Python, Java, Matlab, Basic, b/c/tc-shell

Develop platforms: FreeCAD, Multiphysics Elmer, Gmsh, Matlab, Ansys APDL, etc.

Selected Publications List

First authored:

1. **Zhenwen Wan**, Hongsheng Bi, 2014. Comparing model scenarios of variable plankton N/P ratio versus the constant one for the application in the Baltic Sea. *Ecological modeling* 272, 2839.
2. **Zhenwen Wan**, Hongsheng Bi, Jun She, 2013. Comparison of Two Light Attenuation Parameterization Focusing on Timing of Spring Bloom and Primary Production in the Baltic Sea. *Ecological Modeling*, DOI: 10.1016/j.ecolmodel.2013.03.010 .
3. **Zhenwen Wan**, Jun She, Marie Maar, Lars Jonasson, Jesper Baasch-Larsen, 2012. Assessment of a Physical-Biogeochemical Coupled Model System for Operational Service in the Baltic Sea. *Ocean Science* 8: 683-701. <https://doi.org/10.5194/os-8-683-2012> .
4. **Zhenwen Wan**, Lars Jonasson, Hongsheng Bi, 2011. N/P ratio of nutrient uptake in the Baltic Sea. *Ocean Science* 7: 693-704. <https://doi.org/10.5194/os-7-693-2011> .
5. **Zhenwen Wan**, Joe Vallino, Bruce Peterson, 2008. Study of the inter-annual dynamics in Kuparuk River with a first order approximation inverse model, *Ecological Modeling*, 211(1-2), 97-112.
6. **Zhenwen Wan**, Joe Vallino, 2005. An Inverse Ecosystem Model of Year-to-year Variations with First Order Approximation to the Annual Mean Fluxes, *Ecological Modeling*, 187 (4), 369-388.

7. **Zhenwen Wan**, Yeli Yuan, 2004. Long-term impact of mass transport in the sea with oscillating currents. Journal of hydrodynamics (Chinese Journal), A19(1), (in Chinese with English abstract).
8. **Zhenwen Wan**, Yeli Yuan, Fangli Qiao, 2000. Study on optimization of the parameters of marine ecosystem dynamics model for red tide. Oceanologia Et Limnologia Sinica (Chinese Journal), 31(2):205-209 (In Chinese with English abstract).
9. **Zhenwen Wan**, Fangli Qiao, Yeli Yuan, 1998. The theoretical model and numerical test of long-term mass transportation in the ocean. Journal of hydrodynamics (Chinese Journal), A13(4): 413-421 (In Chinese with English abstract).
10. **Zhenwen Wan**, Fangli Qiao, Yeli Yuan, 1998. Three dimensional numerical modeling of tidal waves in the Bohai, yellow and east China seas. Oceanologia Et Limnologia Sinica (Chinese Journal), 29(6):611-616 (In Chinese with English abstract).

Correspondence authored (*):

11. Yang Jinxiang, Lin Xinyou, **Wan Zhenwen***, 2008. Development of Ocean Carbon Cycle Model in the Northern South China Sea——Hydrodynamic Model Component, Journal of Xiamen University (Natural Science), 2008 (03).
12. Y Ding, C Cao, J Huang, Y Song, G Liu, L Wu, **Z Wan***, 2016. Origins and features of oil slicks in the Bohai Sea detected from satellite SAR images. Marine pollution bulletin 106 (1-2), 149-154.

H-index and ORCID

H-index=14 (all); 9 (since 2019), Zhenwen Wan by GoogleScholar

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Software released

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- **Zhenwen Wan**, Haisen Li, 2006. Tide forecast system for major Chinese harbors, State Copyright Bureau of People's Republic of China, 2006SR02013, No. 049679.
 - **Zhenwen Wan** et al., 2018. The simulation software for electromagnetic waves EML, open accessories: <https://pan.baidu.com/s/1kO4M0VTfkq8SYYNzG0Zw6g>, password: v4dr .
 - **Zhenwen Wan** et al., 2021. The simulation software for multiphysics simulation MySim2021, open accessories:

<https://drive.google.com/drive/folders/1b5qKEMLcSNqBKQFQyKpCJHqMjkaKzpD?usp=sharing>

Personal features

I love playing badminton, chatting, reading and writing. I post many articles as a free writer (<http://a-w.hxwk.org/>) and most of them have been published in Chinese literature platforms. I am living with my wife and two adult children. I speak Chinese, English and basic Danish. I currently live in Copenhagen, holding a permanent work permit in Denmark.