

Curriculum vitae

PERSONAL INFORMATION

Family name, First name: Li, Yan (李艳)
 Researcher unique identifier (s): 0000-0001-8925-3749
 Nationality: Chinese
 URL for web site: <https://www.uib.no/en/persons/Yan.Li>

EMPLOYMENT

2022.08-Present Associate professor of fluid mechanics
 Department of Mathematics, University of Bergen, Norway
 & Bjerknes Centre for Climate Research, Bergen, Norway

2023.05 - 2024.12 International visiting professor (category: recognized researcher; 海外青年访问学者),
 School of Naval Architecture, Ocean, and Civil Engineering (NAOCE),
 Shanghai Jiao Tong University (SJTU), China

2019.10- 2022.08 FRIPRO mobility fellow (Assistant professor equivalent)
 Dep. Energy & Process Eng. (EPT), Norwegian Uni. Sci. & Tech. (NTNU)

2019.12-2021.12 International visiting research fellow
 Department of Engineering Science, University of Oxford, UK

2018.08-2019.09 Postdoctoral research associate
 Department of Engineering Science, University of Oxford, UK

2017.09-2018.08 Researcher (postdoctoral), EPT, NTNU

2014.08-2017.09 PhD candidate, EPT, NTNU

EDUCATION

2014 - 2017 PhD (Thesis title: Surface water waves on depth dependent flows)
 Dep. Energy & Process Eng. (EPT), Norwegian Uni. Sci. & Tech., Norway
 Main supervisor: Simen A.Å Ellingsen (professor) Co-supervisor: Dag Myrhaug
 (professor)
 Date of doctoral defense: 27/09/2017

2011 - 2014 Master of Science
 School of Naval Architecture, Ocean, and Civil Engineering (NAOCE),
 Shanghai Jiao Tong University (SJTU), China

FELLOWSHIPS AND AWARDS (Selected from the start of the PhD education in 2014)

2019-2022 FRIPRO mobility fellowship (value \approx € 300,000), EPT, NTNU, Norway.

2019-2020 Overseas visiting research fellowship (value \approx € 21,600), Research council of Norway, Norway.

2018 The 2018 Outstanding Student Poster and PICO (OSPP) Award, European Geosciences Union.

2017.12 Outstanding Chinese PhD research talent*, Chinese Scholarship Council (CSC). Value \approx € 6000

2017-2018 Postdoctoral fellowship, EPT, NTNU, value \approx € 100,000

2014-2017 Doctoral fellowship, EPT, NTNU., Norway, value \approx € 280,000

*Top ~1% PhD students of Chinese nationality all around the world in 2017 except for those in China and who are a recipient of a CSC scholarship

MOBILITY (short and long-term research stay)

2023.05-2024.12 International visiting research fellow (associate professor, 海外青年访问学者)
 NAOCE & State Key Lab. Ocean Eng., SJTU, China

2020.02-2021.12 International visiting research fellow
 Department of Engineering Science, University of Oxford, UK

2016.5-2016.8 Collaborative Innovation Center for Advanced Ship and Deep-Sea Exploration,
 School of Naval Architecture, Ocean & Civil Engineering,
 SJTU, China, Supervised by Prof. Francis Noblesse

PROJECTS AND FUNDING

Years	Project name	Funding amount (1000 nok)	Role	Funding from
2023-2023	A bridge to ocean coupling	464	PI	RCN
2019-2022	FRINATEK Mobility Grant: “Water wave modulation and wave forces with sheared currents” (project 287389; website: https://folk.ntnu.no/yal/project287389.html)	3300	PI	RCN
2020-2022	“Directionally Spread Surface Wavepackets subject to an Abrupt Depth Transition (ADT)”	No Fund allocated	Partner	The Supergen ORE Hub and UK-EPSRC
2019-2020	“Experimental study on the evolution of a narrow-banded wavepacket propagating over a step”	~300	PI	UK & China Centre for Offshore Renewable Energy
2018-2020	“Interferences of ship waves in the presence of a vertically sheared current” (project 1801)	~120	PI	State Key Laboratory of Ocean Engineering at SJTU

OTHER FUNDING HIGHLIGHTS

- PI, 2018, H.C. Ørsted - Marie Skłodowska-Curie Actions Postdoc COFUND fellowship (*declined*), ~€ 200,000.
- PI, 2022, European Research Council Starting grant (ERC-StG 2022) (*Shortlisted: Round 2*), ~€ 1,950,000.

SUPERVISION OF GRADUATE STUDENTS AND RESEARCH FELLOWS

2025-2028	2 PhD students (role: 1 main and 1 co-supervisor)
2024-2025	4 master students in offshore wind (UiB, Energy program, role: main supervisor)
2023-2024	1 master students: Sindre Lund Lomås(UiB). (role: main supervisor)
2021-2025	Zirui Xin (PhD candidate); role: supervisor; NAOCE, SJTU, China; Topic: “ <i>Coupled effects of wave-current interaction on offshore bottom-fixed and floating wind turbines</i> ”.
2021-2025	Jianhong Zhang (PhD candidate); NAOCE, SJTU, China. Topic: “ <i>Evolution of directional-spreading steep wave groups in deep water</i> ”.
2019-2023	Zibo Zheng(PhD candidate); role: supervisor; EPT, NTNU; topic: “ <i>Wave statistics in a vertically sheared current</i> ”.
2021-2024	Liangfu Wu (Master thesis), role: supervisor; NAOCE, SJTU, China.
2018-2019	Eric Aalvik. Ms.c. EPT, NTNU, Norway. Master thesis: <i>Numerical implementation of the pressure-patch model of ships on flows of arbitrary shear profiles</i> .

TEACHING ACTIVITIES[†]

- 2023- present, Lecturer of MAT213 Functions of a complex variable (third-year undergraduate), Department of Mathematics, UIB, Norway.
- 2022-present, Lecturer of MAT253 Fluid Mechanics (post-graduate), Department of Mathematics, UIB, Norway.
- 2018 – 2019 Tutorial tutor – Turbomachinery and Hydraulics (third-year undergraduate level), Department of Engineering Science, University of Oxford, UK.
- 2014 – 2018 Teaching assistant (25% work time) – Fluid Mechanics (second year undergraduate level), Department of energy and process engineering, NTNU, Norway.

([†] I have been employed in a **100% research position** from 01/10/2019 to 31/07/2022)

COMMISSION OF TRUST

- 2022 – 2023 **Referee for funding proposals:** the Israel Science Foundation (ISF).
Guest editor of the research topic ' Wave-Induced Particle Motions in the Ocean', hosted by *Frontiers in Marine Science* - section *Physical Oceanography*

- Reviewer editor** of the section of Coastal Ocean Processes within Frontiers in Marine Science
- 2022 – 2024 **Organizer** of Fluids Mechanics Seminar, University of Bergen, Bergen
- 2021 – 2024 General Assembly of the European Geosciences Union, Vienna, Austria.
- Convener & Co-convener** of session NH5.2 `Extreme events in sea waves: physical mechanisms and mathematical models`.
- 2018 37th International Conference on Ocean, Offshore & Arctic Engineering, Madrid, Spain.
Co-chair of the session 6-2-1 `Wave-structure interactions`.
- 2016 35th International Conference on Ocean, Offshore & Arctic Engineering, Busan, South Korea.
Co-chair of the session 6-1-4 `Advanced Ship Hydromechanics and Marine Technology`.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- 2016 – present Member of the American Society of Mechanical Engineers
- 2016 – present Member of European Geosciences Union
- 2016 – 2017 Member of the American Physical Society
- 2016 – 2017 Member of European Mechanics Society
- 2015 – 2016 Member of the International Society of Offshore and Polar Engineers

REFEREE SERVICE

- Journal reviewer J. Fluid Mech. (standard and rapids); Scientific reports; Phys. Fluids; Dynamics of Atmospheres and Oceans; European J. Fluid Mech./B; Appl. Ocean Res.; Ocean Dynamics.; Ocean Eng.; Wave motions; Ocean modelling; Frontier in Marine Science
- June 2018 Outstanding reviewer recognized by European Journal of Fluid Mechanics/B
- August 2018 Outstanding reviewer recognized by Applied Ocean Research
- 2019-present **External master thesis examiner: 1**
Internal examiner of PhD thesis/trial lecture/leader of evaluation committee: 5

RECENT INVITED TALKS/PRESENTATIONS IN SEMINARS/CONFERENCES (selection in the last 5 years)

- Invited speaker*, March 2023, IMOD workshop 2024, Trondheim, Norway
- Invited speaker*, March 2023, WISE 2024, Zoominar
- Oral presentations*, January 2023 & 2024. DeepWind 2023/3034, Trondheim, Norway
- Oral presentation*, International workshop of Extreme Waves, Aug.28-Sep.1,2023, Dresden, Germany.
- Oral presentation*, April 2023, NH5.2. Extreme events in sea waves: physical mechanisms and mathematical models EGU, Vienna, Austria.
- Oral presentation*, the 4th workshop on Waves and Wave-Coupled Processes, Feb. 2023, Uppsala, Sweden.
- Oral presentations*, January 2023. Deepwind 2023, Trondheim, Norway
- Guest Lecturer*, May 2022, School of Civil Engineering and Transportation, South China University of Technology, Guangzhou 510641, China
- Guest Lecturer*, April 2022, State Key Laboratory of Coastal and Offshore Engineering, Dalian University of Technology, China
- Invited talk*, November 2021, Fluid Mechanics Seminar, Department of Mathematics, UIB.
- Oral presentations*, May 2022. European Geosciences Union General Assembly (EGU), Vienna, Austria
- Oral presentations*, June 2016-2019, 2022, The International Conference on Ocean, Offshore and Arctic Engineering (OMAE).
- Poster presentation*, April 2019, European Geosciences Union General Assembly (EGU), Vienna, Austria.
- Invited talk*, Civil engineering and fluid mechanics Seminar, Dep. Eng. Sci., University of Oxford, October 2018.
- Poster Presentation*. April 2018. European Geosciences Union General Assembly (EGU), Vienna, Austria, Outstanding Student Poster and PICO (OSPP) Award.
- Poster presentation*, June 2017, European Geosciences Union General Assembly (EGU), Vienna, Austria.

PUBLICATIONS

H index :12 (Source: <https://scholar.google.com/citations?user=IDtKE5UAAAAJ&hl=en>; retrieved: 19/05/2023)

Peer-reviewed journal papers (sole-authored publications in blue, +publications with students I supervised)

- [1] [Li, Yan.](#), & Chabchoub, A. (2024). How currents trigger extreme sea waves. The roles of Stokes drift, Eulerian return flow, and a background flow in the open ocean. *Geophysical Research Letters*, 51(6), e2023GL107381.
- [2] Liang, H., [Li, Yan.](#), & Chen, X. (2024). An Earth-fixed observer to ship waves. *Journal of Fluid Mechanics*, 984, A14.
- [3] Ellingsen, S. Å., Zheng, Z., Abid, M., Kharif, C., & [Li, Yan.](#) (2024). Dispersive Wave Focusing on a Shear Current: Part 1—Linear Approximations. *Water Waves*, 1-45.
- [4] [Li, Yan.](#), & Chabchoub, A. (2023). On the formation of coastal rogue waves in water of variable depth. *Cambridge Prisms: Coastal Futures*, 1, e33.
- [5] [Li, Yan](#) (2023). On coupled envelope evolution equations in the Hamiltonian theory of nonlinear surface gravity waves. *Journal of Fluid Mechanics*. vol. 960.
- [6] Tang, T., Moss, C., Draycott, S., Bingham, H. B., Van Den Bremer, T. S., [Li, Yan](#), & Adcock, T. A. (2023). The influence of directional spreading on rogue waves triggered by abrupt depth transitions. *Journal of Fluid Mechanics*, 972, R2.
- [7] +Xin, Z.; Li, X.; [Li, Yan](#) (2023). Coupled effects of wave and current interaction on loads on a bottom-fixed vertical slender cylinder. *Coastal Engineering*. vol. 183.
- [8] +Zheng, Z.; [Li, Yan](#); Ellingsen, S.Å (2023). Statistics of weakly nonlinear waves on currents with strong vertical shear. *Physical Review Fluids*. 8, 014801.
- [9] Li, Z.; Tang, T.; [Li, Yan](#); Draycott, S.; van den Bremer, T.S.; Adcock, T. A. A. (2023). Wave loads on ocean infrastructure increase as a result of waves passing over abrupt depth transitions. *Journal of Ocean Engineering and Marine Energy*. 9(2),1-9.
- [10] Draycott, S.; [Li, Yan](#); Stansby, P.; Adcock, T.A.A.; van den Bremer, T. S. (2022). Harmonic-induced wave breaking due to abrupt depth transitions: An experimental and numerical study. *Coastal Engineering*. vol. 171.
- [11] Zhou, B., Zhang, Q., Jin, P., Li, Y., Liu, Y., Zheng, S., & Ning, D. (2022). Geometric asymmetry in the energy conversion and wave attenuation of a power-take-off-integrated floating breakwater. *Ocean Engineering*, 246, 110576.
- [12] [Li, Yan.](#) (2021). Three-dimensional surface gravity waves of a broad bandwidth on deep water. *Journal of Fluid Mechanics*. vol. 926.
- [13] [Li, Yan](#); Draycott, S.; Adcock, T. A. A.; van den Bremer, T. S. (2021). Surface wavepackets subject to an abrupt depth change. Part 2. Experimental analysis. *Journal of Fluid Mechanics*. vol. 915.
- [14] [Li, Yan](#); Draycott, S.; Zheng, Y.; Lin, Z.; Adcock, T. A. A.; van den Bremer, T. S. (2021). Why rogue waves occur atop abrupt depth transitions. *Journal of Fluid Mechanics*. vol. 919.
- [15] [Li, Yan](#); Li, X. (2021). Weakly nonlinear broadband and multi-directional surface waves on an arbitrary depth: A framework, Stokes drift, and particle trajectories. *Physics of Fluids*. vol. 33 (7).
- [16] [Li, Yan](#); Zheng, Y.; Lin, Z.; Adcock, T. A. A.; van den Bremer, T. S. (2021). Surface wavepackets subject to an abrupt depth change. Part 1. Second-order theory. *Journal of Fluid Mechanics*. vol. 915.
- [17] Zheng, Y.; Lin, Z.; [Li, Yan](#); Adcock, T. A. A.; Li, Y.; van den Bremer, T. S. (2020). Fully nonlinear simulations of unidirectional extreme waves provoked by strong depth transitions: The effect of slope. *Physical Review Fluids*. vol. 5 (6).
- [18] [Li, Yan](#) and Ellingsen, S.Å. (2019). A Framework for Modeling Linear Surface Waves on Shear Currents in Slowly Varying Waters. *Journal of Geophysical Research: Oceans*. 124 (4).
- [19] [Li, Yan](#) (2018). Wave-Interference Effects on Far-Field Ship Waves in the Presence of a Shear Current. *Journal of Ship Research*. 62 (1).
- [20] Ellingsen, S.Å. and [Li, Yan](#) (2017). Approximate dispersion relations for waves on arbitrary shear flows. *Journal of Geophysical Research: Oceans*. (joint first author, alphabetically). DOI: 10.1002/2017JC012994.
- [21] [Li, Yan](#), Smeltzer, B. K., and Ellingsen, S.Å. (2017). Transient wave resistance upon a real shear current. *European Journal of Mechanics-B/Fluids*. DOI: <https://doi.org/10.1016/j.euromechflu.2017.08.012>.
- [22] [Li, Yan](#) and Ellingsen, S.Å. (2016). Multiple resonances of a moving oscillating surface disturbance on a shear current. *Journal of Fluid Mechanics*. vol. 808.
- [23] [Li, Yan](#) and Ellingsen, S.Å. (2016). Effect of Anisotropic Shape on Ship Wakes in Presence of Shear Current of Uniform Vorticity. In *ASME 2016 35th International Conference on Ocean, Offshore and Arctic Engineering*. American Society of Mechanical Engineers.

- [24] **Li, Yan** and Ellingsen, S.Å. (2016). Ship waves on uniform shear current at finite depth: wave resistance and critical velocity. *Journal of Fluid Mechanics*. vol. 791.

on the cover of JFM



- [25] **Li, Yan**, Li, X., and Luo, Y. (2015). Jacket Effects on Heave, Roll and Pitch Motions of a New Floating Deep-draft Semisubmersible Concept, *Journal of Ship Mechanics*, 19(6), 1-13, (ID:1007-7294 (2015) 06-0664-13).
- [26] **Li, Yan**; Xin, Z.; Li, X. (2023). Exponential integrator for nonlinear surface gravity-capillary waves. In *ASME 2023 42th International Conference on Ocean, Offshore and Arctic Engineering (OMAE-2023)*. June 11-17, Melbourne, Australia.
- [27] **Li, Yan** and Ellingsen, S.Å. (2018). Surface waves generated by a translating and oscillating source atop realistic shear flows. In *2018 37th International Conference on Ocean, Offshore and Arctic Engineering*.
- [28] Smeltzer, B.K., Eirik, Æ., **Li, Yan**, and Ellingsen, S.Å. (2018). An experimental setup for wave-body forces in shear currents. In *Proceedings of the 33rd International Workshop on Water Waves and Floating Bodies (IWWWFB)*.
- [29] Smeltzer, B. K., **Li, Yan**, and Ellingsen, S.Å. (2017). Effect on Doppler resonance from a near-surface shear layer. In *ASME 2017 36th International Conference on Ocean, Offshore and Arctic Engineering*. American Society of Mechanical Engineers.
- [30] **Li, Yan** and Ellingsen, S.Å. (2016). Dispersion relations of waves generated by a travelling oscillating disturbance on a shear current. In *Proceedings of the 31st International Workshop on Water Waves and Floating Bodies (IWWWFB)*, Plymouth, Mi., USA, April 3-6, 2016, Abstract 24.
- [31] Ellingsen, S.Å. and **Li, Yan** (2015). Dispersion relations of waves generated by a travelling oscillating disturbance on a shear current. In *Proceedings of the 30st International Workshop on Water Waves and Floating Bodies (IWWWFB)*, Bristol, UK, pp. 57-60.
- [32] **Li, Yan** and Ellingsen, S.Å. (2015). Initial value problems for water waves in the presence of a shear current. In *The Twenty-fifth International Ocean and Polar Engineering Conference*. International Society of Offshore and Polar Engineers. 3, 543-549.
- [33] **Li, Yan** and Ellingsen, S.Å. (2015). Waves in presence of a shear current with uniform vorticity. In *Proceedings of the 8th National Conference on Computational Mechanics (MekIT'15)*, pp. 295-306.
- [34] Li, Y., Wu, S.B., Li, X. (2015). Current-induced force of a subsurface system comprising a tunnel element and two barges at the immersing stage, *Journal of Ship Mechanics*, 19(11), 18-24, (doi: 1007-7294 (2015) 11-1318-07).
- [35] Li, Y. (2014). Investigation on hydrodynamic performance and vortex-induced motion of a jacket combined deep-draft semi-submersible concept for the South China Sea. *Master thesis*, Shanghai Jiao Tong University.
- [36] Li, Y. and Li, X. (2014). Nonlinear analysis of a lazy-wave steel catenary riser in deep-water, *Shipbuilding of China*, 2, 92-101.
- [37] Li, Y. and Li, X. (2013). Nonlinear dynamic analysis of a steel catenary riser in deep-water, *Shipbuilding of China*, 2, 92-101.
- [38] Li, Y. and Li, X. (2013). Review of the design and Research on deep-water steel catenary riser. *China Offshore Platform*, 28(2), 6-13.