Curriculum Vitae Richard J.A.M. Stevens

Personal Data

Present affiliation	Physics of Fluids group
	Max Planck Center for Complex Fluid Dynamics
	Faculty of Science and Technology
	University of Twente, The Netherlands
Date of birth:	15 November 1984
Nationality:	Dutch
Web of Science:	https://www.webofscience.com/wos/author/rid/A-5427-2009
ORCID:	https://orcid.org/0000-0001-6976-5704
Google scholar:	https://scholar.google.com/citations?user=Ub0vNUcAAAAJ&hl=en
Website URL:	https://stevensrjam.github.io/Website/

Present Position

06/2024 - present Adjunct Professor, University of Twente, The Netherlands.

Previous Positions

06/2021 - 05/2024 Associate Prof. with tenure, University of Twente, The Netherlands.

09/2016 - 05/2021 Tenure track Assistant Prof. University of Twente, The Netherlands.

09/2015 - 08/2016 FOM Young Energy Scientist Fellow, University of Twente, The Netherlands.

05/2012 - 08/2015 FOM Young Energy Scientist Fellow, Johns Hopkins University, United States.

07/2011 - 04/2012 Postdoc in the Physics of Fluids group, University of Twente, The Netherlands.

Education

06/2011 PhD degree after 3 years and 3 months, with distinction

04/2008-06/2011 PhD Project in the Physics of Fluids group at the University of Twente, The Netherlands
- Promotors: Prof. Detlef Lohse (University of Twente) and Prof. Herman Clercx (Eindhoven University).

09/2006-03/2008 M. Sc. Applied Physics at the University of Twente, The Netherlands (with distinction).
- Final research project on the effect of rotation on heat transport.
- B. Sc. and M. Sc. Applied Physics completed in 4 years and 7 months.

09/2003-07/2006 B. Sc. Applied Physics at the University of Twente, The Netherlands (with distinction).

Personal Fellowships and Awards

2024-2029 ERC consolidator grant (2.000.000 euro).

2018-2023 ERC starting grant (1.500.000 euro).

2016-2022 NWO VIDI Award. Dutch national personal grant for scientific research (800.000 euro).

2016-2022 SHELL-NWO/FOM personal grant funding my tenure track position (700.000 euro).

2012-2016 FOM Young Energy Scientist fellowship (Four-year fully funded postdoc fellowship).

Other Research Grants

2020 Shaping turbulence with smart particles (NWO; Dutch Research Council) (co-applicant).

2019 Work package leader in horizon 2020 High performance computing for wind energy (HPCWE) project.

2016 Funded project in Cooperation India scheme by NWO, FOM, and Government of India (co-applicant).

Awards & Honours

- Invited community review
  - B. Kosović, S. Basu, J. Berg, L.K. Berg, S.E. Haupt, X.G. Larsén, J. Peinke, R.J.A.M. Stevens, P. Veers, S. Watson, Impact of atmospheric turbulence on performance and loads of wind turbines: Knowledge gaps and research challenges.

  Part of the Grand Challenges series coordinated by the European Academy of Wind Energy (EAWE), April 2025.
- Davide Selvatici from my group won young scientist prize at the 1st European fluid dynamics conference (September 2024).
- JRSE selected our article as a Feature Article in October 2024:
  - J.H. Kasper, A. Stieren, R.J.A.M. Stevens, Simulation and modeling of wind farms in baroclinic atmospheric boundary layers, *J. Renew. Sustain. Energy* (2024), 16, 063302 (2024).
- Recipient of the inaugural 2024 WES Outstanding Reviewer Award (May 2024).
- ERC consolidator grant 2023 (2.000.000 euro) (November 2023).
- Visualization of my high Ra number simulations is featured on the Physics Today cover (November 2023).
- Invited Journal of Fluid Mechanics Focus on Understanding wind farm power densities (January 2023).
- Physics Magazine featured our results (September 2022)

  - A. Stieren, J.H. Kasper, S.N. Gadde, and R.J.A.M. Stevens, Impact of Negative Geostrophic Wind Shear on Wind Farm Performance, PRX Energy 1, 023007 (2022).
- Awarded the UT Social Media Award (January 2022).
- Invited article for the Dutch Physics Magazine (NTVN) (November 2021).
- Invited article for the J.M. Burgercentrum research highlights 2021 (November 2021).
- Nominated by Dutch magazine for "Kijk beste tech-idee van 2021" (October 2021).
- NemoKennislink, University of Twente, Interesting Engineering, and others featured our results on the performance of wind turbine in complex terrain (September 2021).
  - L. Liu, R.J.A.M. Stevens, Effects of atmospheric stability on the performance of a wind turbine located behind a three-dimensional hill, Renewable Energy 175 926-935 (2021).
- Phys. Rev. Fluids selected our paper as Editors' suggestion (July 2021).
  - L. Liu, R.J.A.M. Stevens, Enhanced wind-farm performance using windbreaks, Phys. Rev. Fluids 6, 074611 (2021).

  Also featured in Science News, Physics Magazine, Welt der Physik, Wissenschaft Aktuell, and others.
- Invited speaker at SuperMUC-NG status and results workshop featuring large-scale projects (June 2021).
- JRSE selected our article as a Feature Article in February 2021:
  - S.N. Gadde, R.J.A.M. Stevens, Effect of low-level jet height on wind farm performance, J. Renew. Sustain. Energy 13, 013305 (2021)

  Featured by AIP press De Ingenieur, Technisch Weekblad, University of Twente News, and others.
- Invited speaker in the APS-DFD symposium on Wind Energy Fluid Mechanics (November 2020).
- FYFD, a fluid dynamics website with over 350,000 followers, featured our work in November 2020.
  - A. Blass, X. Zhu, R. Verzicco, D. Lohse, R.J.A.M. Stevens, Flow organization and heat transfer in turbulent wall sheared thermal convection, J. Fluid Mech. 897, A22 (2020).
- Selected as one of the featured "top scientists" of the University of Twente (April 2019).
- Invited editor for special issue "Fluid Mechanics and Turbulence in Wind Farms" in Energies (March 2019).
- ERC starting grant 2018 (1.500.000 euro) (August 2018).
- Member of the Young Academy at the University of Twente (August 2018).
- Phys. Rev. Lett. selected our paper below for the cover illustration (April 2018):
  - X. Zhu, V. Mathai, R.J.A.M. Stevens, R. Verzicco, and D. Lohse, Transition to the ultimate regime in two-dimensional Rayleigh-Bénard convection, Phys. Rev. Lett. 120, 144502 (2018).
- Annual Review on Fluid Mechanics featured by Knowable Magazine from Annual Reviews (October 2017).
- Selected in the top 25 of the New Scientist wetenschapstalent 2017 competition (June 2017).
- Annual Review on Fluid Mechanics on "Flow Structure and Turbulence in Wind Farms" (August 2016).
- NWO STW VIDI award 2016 (800.000 euro) (May 2016).

- SHELL-NWO/FOM “Computational Sciences for Energy Research” (CSER) tenure-track award (700.000 euro) (March 2016).
- Corrsin-Kovasznay outstanding paper award 2015; Best paper by young scholar at Johns Hopkins University. (January 2016).
- FOM YES! Award (Young Energy Scientist), 4-year funded postdoc fellowship (April 2012-August 2016).
- I was invited and attended the symposium “Getting from where we are to where we want to be in clean energy” hosted by HM King Willem-Alexander and HM Queen Máxima at the Royal Palace (June 2015).
- The Journal of Fluid Mechanics featured our paper below in Focus on Fluids in December 2014:
  - R.J.A.M. Stevens, M. Wilczek, C. Meneveau, Large-eddy simulation study of the logarithmic law for second and higher-order moments in turbulent wall-bounded flow, J. Fluid Mech. 757, 888-907 (2014).
- AIP and JRSE highlighted our paper below in a special press release in April 2014:
  - R.J.A.M. Stevens, D. F. Gayme, C. Meneveau, Large eddy simulation studies of the effects of alignment and wind farm length, J. of Renewable and Sustainable Energy 6, 023105 (2014).
- Overijssel PhD Award 2012 (best PhD dissertation at Twente University, 5000 Euro, November 2012).
- EUROTHERM Young Scientist Prize 2012 (2500 Euro, September 2012, awarded once per 4 years).
- 2nd place in the international 2012 DSM Science & Technology Awards North (5000 Euro, June 2012).
- Winner of the national DSM Science & Technology Awards 2012 (June 2012).
- Finalist in ECCOMAS PhD competition award (March 2012).
- ERCOFTAC da Vinci Award: Prize for best PhD thesis on fluid dynamics in Europe (October 2011).
- PhD degree with distinction (June 2011).
- New J. of Phys. selected our paper below as one of best New J. of Phys. papers in 2010:
  - R.J.A.M. Stevens, H.J.H. Clercx, D. Lohse, Optimal Prandtl number for heat transfer enhancement in rotating turbulent Rayleigh-Bénard convection, New J. Phys. 12, 075005 (2010).
- Phys. Rev. Lett. selected our paper below for the cover illustration in January 2009:
  - J.Q. Zhong, R.J.A.M. Stevens, H.J.H. Clercx, R. Verzicco, D. Lohse, G. Ahlers, Prandtl-, Rayleigh-, and Rossby-Number dependence of heat transport in turbulent rotating Rayleigh-Bénard convection, Phys. Rev. Lett. 102, 044502 (2009).
- Shell Masterprize for best master thesis on sustainable development and energy (5000 Euro, March 2009).

Key Numbers

- Number of peer-reviewed articles: 127
- Hirsch-index: H = 44 (Web of Science); H=50 (Google Scholar)
- m-index = H/(# of years after PhD) = 3.1 (Web of Science); 3.6 (Google Scholar)
- Citations: 5833 (Web of Science); 8060 (Google Scholar)
- Average Citations per journal article: 34.2 (Web of Science); 63.5 (Google Scholar)

Journal Publications

- 127 peer-reviewed papers; 32 first author, 48 lead author, 63 without PhD advisors.
- Web of Science ranks 9 article among the top 2% cited papers (data available up to 2023).
- 1 Annual Review of Fluid Mechanics.
- 11 Physical Review Letters (2 article selected for the cover).
- 2 Proceedings of the National Academy of Sciences (PNAS).
- 34 Journal of Fluid Mechanics (5 (4 as first author) of these articles are ranked among the top 2% cited papers according to Web of Science, 1 highlighted in Focus on Fluids, and 1 Focus on Fluids article).
- 1. Q. J. R. Meteorol. Soc.
- 7 Wind Energy
- 8 Renewable Energy
- 5 Journal of Renewable and Sustainable Energy (including 3 featured articles)
- 1 New Journal of Physics article selected as one of the best articles from 2010.

Grants Computational Time on Supercomputers

2016-present	Gauss large-scale computing project on SuperMUC-NG. Total allocation: 600+ million hours.
2009-present	Two (2) EuroHPC, Twelve (12) European PRACE and EuroHPC projects and five (5) European DECI projects on European Supercomputers. Total allocation: 800+ million hours.
2008-present	About 30 million CPU hours, per year, at SURF in Amsterdam through NWO, The Netherlands.
2016-2020	Large-scale production projects on PiZ Daint. Total allocation: 1+ million GPU node hours.
2012-2015	Computational time at Trestles, Stampede, and Comet from XSEDE (2012-2015).
2012-2015	Computational time at Yellowstone NCAR (2012-2015).

Invited Lectures (selection)

I have given 100+ lectures and 35+ invited lectures. A selection of highlighted invited lectures:

07-2025	Keynote speaker at the CFD parschool.
06-2025	Invited speaker at the 25th Symposium on Boundary Layers and Turbulence.
08-2024	Keynote at 13th International Conference on Mechanics and Industrial Engineering (ICMIE 2024).
05-2024	Invited speaker at spring Meeting of the Dutch-Flemish Scientific Computing Society.
08-2023	Flow, Turbulence, and Wind Energy Symposium, Puerto Rico, United States.
08-2023	NWO NERA Energy Symposium.
06-2022	EERA JP Wind: How wind energy can make the most of advances in high-performance computing?
03-2022	Australasian Fluid Mechanics Society (AFMS) seminar series.
06-2021	SuperMUC-NG status and results workshop 2021.
11-2020	APS-DFD symposium on Wind Energy Fluid Mechanics.
01-2020	Focus session on Energy at the NWO Physics Days, Veldhoven, The Netherlands.
06-2019	Arago symposium on Turbulence, Enschede, The Netherlands.
06-2019	Wind Energy Science Conference in Cork, Ireland.
04-2019	DPG spring meeting in Regensburg, Germany.
12-2017	Perspectives on turbulence and wind energy research, Oldenburg, Germany.
10-2017	ERCOFTAC Autumn Festival, Delft, The Netherlands.
05-2017	Fluids and Structures: Interaction and Modeling workshop, Naples, Italy.
04-2016	International Workshop on Physics of Fluids, Peking University, Beijing, China.
01-2015	Invited speaker in Focus session at the FOM Days, Veldhoven, The Netherlands.
12-2012	Keynote presentation at the international Rayleigh-Bénard conference, Hong Kong.
04-2011	KITP program: The nature of turbulence, Santa Barbara, USA.

Organization of Scientific Meetings

2026	ERCOFTAC/EUROMECH symposium on “Turbulent Wind Farm Dynamics”, London, UK.
2024	Symposium organizer at ECCOMAS 2024, Lisbon, Portugal.
2022	Symposium organizer at FYSICA meeting of the Dutch Physical Society (600+ participants).
2020-present	Contact person, JMBC Contact Group on Turbulence, coordinating national activities.
2018	Symposium organizer for the 55th Annual Meeting of the Society of Engineering Science, Spain.
2018	International Conference on Rayleigh-Bénard Turbulence, The Netherlands.

Institutional Responsibilities

2016-present	Faculty member, University of Twente, The Netherlands
2016-present	Graduate student advisor, University of Twente, The Netherlands
2018-2022	Young Academy Twente, University of Twente, The Netherlands

Supervised PhD Students and Postdoctoral Researchers

- Joppe Kleinhout, Offshore wind farm dynamics, PhD (starting 11/25).
- Thomas Lange, Interactions between wind farms, PhD (starting 02/25).
- Dong Chen, Coupling wind farm simulations to weather models, PhD (starting 12/24).
- Giacomo Tanduo, Large Eddy Simulation of off-shore wind farms, PhD (starting 11/24).
- Manideep Pasupula, Effect of diurnal changes on wind farm performance, PhD (starting 10/24).
- Davide Selvatici, Large Eddy Simulation of off-shore wind farms, PhD (02/22-present).
- Yang Liu, Large-eddy Simulation of wind farms, PhD (01/22-present).
- Jens Kasper, Interaction between large scale wind farms, PhD (06/21-09/24). Postdoc in Physics of Fluids department, The Netherlands.
- Sreevanshu Yerragolam, Sheared turbulent thermal convection, PhD (11/19-02/24).
  Researcher at Canon, The Netherlands.
- Robert Hartmann, Rotation and confinement in turbulent Rayleigh-Bénard convection, PhD (09/19-10/23).
  Researcher at Helmholtz-Zentrum Hereon, Institute of Coastal Systems, Germany.
- Lucas Franceschini, High-resolution wind turbine simulations Postdoc (01/22-04/22).
  Presently faculty at IFPEN, France.
- Anja Stieren, Interaction between large scale wind farms, PhD (10/18-09/22).
  Presently at Pondera, The Netherlands.
- Ariane Emmanuelli, Wind turbine modeling and noise propagation, Postdoc (11/20-08/21).
  Presently faculty at École Centrale de Lyon, France.
- Luoqin Liu, Wind farms in complex terrain, Postdoc (06/18-11/21).
  Presently tenure track assistant professor at University of Science and Technology of China (USTC).
- Jessica Strickland, Analytical modeling and large eddy simulations of wind farms, PhD (09/17-11/21). Presently research scientist at KNMI, The Netherlands.
- Guiquan Wang, Turbulent Rayleigh-Bénard convection in spherical coordinates, Postdoc (10/19-12/21).
  Presently research scientist at IMEC, Belgium.
- Srinidhi Nagarada Gadde, Effect of atmospheric stability on wind farm performance, PhD (05/17-02/22).
  Presently tenure track assistant professor at University of Twente, The Netherlands
- Mengqi Zhang, Simulation and modeling of extended wind farms, Postdoc (09/16-01/18).
  Presently tenure track assistant professor at National University of Singapore, Singapore.

Co-Supervised PhD Students and Postdoctoral Researchers

- Martin Assen, Numerical simulation of bubbles, drops and particles in turbulence, PhD (09/17-08/22).
  Presently researcher in Industry at ASML, the Netherlands.
- Pieter Berghout, Roughness and spirals in Taylor-Couette flow, PhD (02/17-01/21).
  Presently research scientist at ASML, the Netherlands.
- Alexander Blass, Sheared convection and large scale structures in Rayleigh-Bénard, PhD (06/16-09/20).
  Presently head of operations at NEURA Robotics, Germany.
- Xiaojue Zhu, Roughness in Taylor-Couette, PhD / Postdoc (09/15-10/18).
  Presently Max Planck group leader in Göttingen, Germany.
- Yantao Yang, Direct numerical simulation rotating convection, Postdoc (09/15-06/17).
  Presently associate professor at Peking University, China
- Tony Martinez, Wind-turbine modeling, PhD (08/14-08/15).
  Presently Researcher IV-Mechanical Engineering at NREL, USA
- Rodolfo Ostilla Mónico, Direct numerical simulations of turbulent Taylor-Couette, PhD (05/11-05/12).
  Presently assistant professor at Universidad de Cádiz, Spain
- Erwin van der Poel, Connecting flow structures and heat flux in RB convection, PhD (09/11-05/12).
  Presently operational Analyst at Thales, Netherlands

Supervised Bachelor, Master, and Internship Projects

11/24-09/25	Thijs van der Ham, Wind farms in stratocumulus-topped boundary layers, Master thesis.
09/24-07/25	Jasper Schuurman, Effect of sea surface temperature on stratocumulus-topped boundary layers, Master thesis.
04/24-07/24	Rick Pluister, Can rotor tilt improve wind farm power production?, Bachelor thesis.
04/22-01/23	Siem van de Wetering, Concentrated wind power for enhanced performance of wind-farms, Master thesis.
11/21-03/22	Floris Hoek, The impact of wind farm size on wind farm wakes, Bachelor project.
07/21-11/21	Jurre van Grafhorst, The effect of inversion capping and free atmospheric stratification on wind farm blockage, Bachelor project.
03/21-08/21	Max de Blok, Machine learning in fluid dynamics, Bachelor project.
04/21-07/21	Jules Colas, Numerical resolution of the Euler for the propagation of wind turbine noise in the environment, Internship student from École Centrale de Lyon.
03/21-08/21	Estelle Meziani, Numerical study of wind farm noise propagation in the environment using Parabolic Equation, Internship student from École Centrale de Lyon.
03/21-08/21	Zeineb Horriche, Effect of Coriolis force on wind farm performance, Internship student.
11/20-03/21	Tjeerd Haan, Modeling turbulence intensity in extended wind farms, Bachelor project.
11/20-03/21	Koen Super, Effect of relative placement of small turbines in an existing wind farm on the total productivity, Bachelor project.
09/19-12/19	Berwout Heemstra, Large eddy simulations of wind farms in convective atmospheric boundary layers, Bachelor project.
02/18-05/18	Rick Dingemans, Modeling turbulent structures in Taylor-Couette flow, Bachelor project.
09/17-12/17	Liesbeth Klein Kranenbarg, Optimal heat transport in rotating Rayleigh-Bénard convection, Bachelor project.
04/17-06/17	Arnout Franken, Structure functions in thermal convection, Bachelor project.
12/16-03/17	Mark Arendshorst, Modeling the effect of vertically staggered wind farms, Bachelor project.
12/10-09/11	Erwin van der Poel, Connecting flow structures and heat flux in 2D turbulent Rayleigh-Bénard convection, Master Thesis.
08/10-10/10	Daniel Albernaz, Direct numerical simulations of Taylor-Couette, Internship student.
09/09-07/10	Jim Overkamp, Rotating Rayleigh-Bénard convection in cylindrical cells with aspect ratios one and two, Master thesis.

Teaching

2025-present	Invited lecturer at the JMBC “Wake flows” course in Delft, The Netherlands.
2024-present	Lecturer for minor on Renewable Energy and Climate at the University of Twente.
2015-present	Lecturer and course coordinator for “Turbulence” (Master) at the University of Twente.
2019-present	Lecturer and course coordinator for “Mathematical and Numerical Physics” (Master).
2018-present	Invited lecturer at the JMBC “Turbulence” course in Delft, The Netherlands.
2016-2017	Lecturer for “Module 5” (Bachelor) at the University of Twente.
2013-2015	Guest lecturer for the turbulence course at Johns Hopkins University, United States.
11/2020	Invited lecturer on fluid physics modeling challenges of wind plants at the zEPHYR ITN training.
06/2017	Invited lecturer at the ICTS summer school on Buoyancy-driven flows, Bengaluru, India.

Reviewing Activities

2024	Member of NWO Open Competition Domain Science - M panel in the Netherlands).
2020-2022	Member NWO-VIDI panel (top personal grant (up to 7 years after PhD) in the Netherlands).
2016-present	I have been a reviewer/opponent at 20 dissertation committees at EPFL (Switzerland), University of Naples (Italy), Uppsala University (Sweden), University of British Columbia (Canada), Delft University, University of Eindhoven, University of Groningen, University of Twente (Netherlands).
2016-present	Proposal reviews for ERC Starting, ERC Consolidator, ERC Advanced grants, the German Research Foundation DFG, the Swiss National Science Foundation (SNF), the French National Science Foundation (ANF), the Czech Academy of Sciences, The Research Council of Norway.
2012-present	Review of computational proposals for the Department of Energy (DOE), PRACE, Swiss National Science Foundation (SNF), and the Netherlands National Computing Facilities (NCF).
2009-present	Over 400 verified peer-reviews for Web of Science Journals, such as Physical Review Letters, Quarterly Journal of the Royal Meteorological Society, Journal of Geophysical Research: Oceans, Journal of Fluid Mechanics, Wind Energy, Physical Review Fluids, Computers & Fluids, Applied Energy, Journal of Renewable and Sustainable Energy, Wind Energy Science, Journal of Turbulence, Boundary-Layer Meteorology, Energies, Physical Review E, European Journal of Mechanics - B/Fluids

Public Engagement and Science Communication

I have delivered 100+ lectures, including 35+ invited talks and keynotes at leading international venues such as APS-DFD and DPG meeting in Regensburg . My research is regularly featured in national and international media, and in 2022 I received my university's Social Media Award for science communication. I disseminate results broadly via social media (13.000+ LinkedIn followers; with up to 2+ million yearly views), popular science outlets (De Ingenieur; Nederlands Tijdschrift voor Natuurkunde), public lectures, and university communication channels.