

Adrian VAN KAN

PERSONAL DATA

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EMPLOYMENT

NOV 2021 - NOW Postdoctoral researcher
Funded by a DFG Walter Benjamin fellowship (Projektnummer: 522026592)
and the National Science Foundation (Grants DMS-2009563 and DMS-2308337)
Department of Physics, UC Berkeley
Advisors: Edgar Knobloch (UC Berkeley), late Keith Julien (U Colorado, Boulder)

EDUCATION

OCT 2018 - OCT 2021 PhD, **Department of Physics, ENS Paris**,
Degree awarded by ENS-PSL on 09/09/2021
Advisors: Alexandros Alexakis, Marc-Etienne Brachet (co-advisor)
SEP 2017 - SEP 2018 Visiting student in PHYSICS, Studienstiftung exchange, **ENS Paris**

TEACHING EXPERIENCE

SEP 2020 - JAN 2021 Teaching Assistant to Prof Stephan Fauve, Dynamical Systems (M1), ENS
SEP 2020 - OCT 2020 Teaching Assistant to Prof Stephan Fauve, Instabilities (M2), ENS
SEP 2019 - FEB 2020 Teaching Assistant to Prof Stephan Fauve, Dynamical Systems (M1), ENS
OCT 2016 - MAR 2017 Teaching Assistant to Prof Arthur Hebecker, Mechanics, U. Heidelberg
APR 2013 - OCT 2013 Teaching Assistant to Prof Winfried Kohlen, Analysis 2, U. Heidelberg

UNDERGRADUATE RESEARCH MENTORING EXPERIENCE

2020 Basile Poujol (ENS Paris, publication in Phys. Rev. Fluids)
2021 Xander de Wit (then ENS Paris, now U. Eindhoven, publication in J. Fluid Mech.)
2022 - 2023 Mathi Raja (UCB Physics, BPURS Award, publication in Phys. Rev. E)
2022 - NOW Lichuan Xu (UCB Physics, BPURS Award, Berkeley PI², publication in Phys. Rev. Fluids)
2023 - NOW Dave Li (then UCB Physics, now UW) publication in prep.)
2024 - NOW Maya Ann Basu (UCB Physics, BPURS Award)
2024 - NOW Troy Tsubota (UCB Physics, BPURS Award, Berkeley PI²)

PUBLICATIONS (PEER-REVIEWED)

20. **A. van Kan**: Critical transitions in turbulence – an invited review for Chaos: An Interdisciplinary Journal of Nonlinear Science (in prep.)
19. **A. van Kan**, K. Julien, B. Miquel, E. Knobloch: Bridging the Observational-Experimental Gap in Rapidly Rotating Convection (in prep.)
18. **A. van Kan**, K. Julien, B. Miquel, E. Knobloch, G. Vasil: Rescaled Direct Numerical Simulations of Rapidly Rotating Convection (in prep.)
17. L. Xu, **A. van Kan**, C. Liu, E. Knobloch (2024): Noise-Induced Transitions in Anisotropic Two-Dimensional Turbulence (accepted in Phys. Rev. Fluids, Editor's Suggestion)
16. **A. van Kan**, B. Favier, K. Julien, E. Knobloch (2024): From a vortex gas to a vortex crystal in instability-driven two-dimensional turbulence. *J. Fluid Mech.*, 984, A41. [doi:10.1017/jfm.2024.162](https://doi.org/10.1017/jfm.2024.162)
15. A. Alexakis, R. Marino, P. Mininni, **A. van Kan**, R. Foldes and Fabio Feraco (2024): Large-scale self-organisation in dry turbulent atmospheres, *Science*, 383, 6686, pp. 1005-1009, [doi:10.1126/science.adg8269](https://doi.org/10.1126/science.adg8269)
14. M. Raja, **A. van Kan**, B. Foster, E. Knobloch (2023): Collisions of localized patterns in a non-variational Swift-Hohenberg equation, *Phys. Rev. E* 107, 064214, [doi:10.1103/PhysRevE.107.064214](https://doi.org/10.1103/PhysRevE.107.064214)
13. **A. van Kan**, F. Pétrélis (2023): $1/f$ noise and anomalous scaling in Lévy noise-driven on-off intermittency. *J. Stat. Mech.*, 013204, [doi:10.1088/1742-5468/acac71](https://doi.org/10.1088/1742-5468/acac71)
12. **A. van Kan**, B. Favier, K. Julien, E. Knobloch (2022). Spontaneous suppression of inverse energy cascade in instability-driven 2-D turbulence. *J. Fluid Mech.*, 952, R4. [doi:10.1017/jfm.2022.935](https://doi.org/10.1017/jfm.2022.935)
11. X. de Wit, **A. van Kan**, A. Alexakis (2022): Bistability of the large-scale dynamics in quasi-two-dimensional turbulence. *J. Fluid Mech.*, 939, R2. [doi:10.1017/jfm.2022.209](https://doi.org/10.1017/jfm.2022.209)

10. A. van Kan, A. Alexakis, M. Brachet (2022): Geometric microcanonical theory of two-dimensional Truncated Euler flows, *Phil. Trans. R. Soc. A* 380: 20210049. [doi:10.1098/rsta.2021.0049](https://doi.org/10.1098/rsta.2021.0049)
9. A. van Kan, A. Alexakis (2021): Energy cascades in stratified rapidly rotating turbulence within highly elongated domains, *J. Fluid Mech.*, 933, A11. [doi:10.1017/jfm.2021.1083](https://doi.org/10.1017/jfm.2021.1083)
8. A. van Kan, A. Alexakis, M. Brachet (2021): Lévy on-off intermittency, *Phys. Rev. E*, 103(5), 052115. [doi:10.1103/PhysRevE.103.052115](https://doi.org/10.1103/PhysRevE.103.052115)
7. A. van Kan, A. Alexakis, M. Brachet (2021): Intermittency of three-dimensional perturbations in a point-vortex model *Phys. Rev. E*, 103(5), 053102. [doi:10.1103/PhysRevE.103.053102](https://doi.org/10.1103/PhysRevE.103.053102)
6. B. Pujol, A. van Kan, A. Alexakis (2020): Role of the forcing dimensionality in thin-layer turbulent energy cascades, *Phys. Rev. Fluids* 5, 064610. [doi:10.1103/PhysRevFluids.5.064610](https://doi.org/10.1103/PhysRevFluids.5.064610)
5. A. van Kan, A. Alexakis (2020): Critical transition in fast-rotating turbulence within highly elongated domains, *J. Fluid Mech.*, 899, A33. [doi:10.1017/jfm.2020.443](https://doi.org/10.1017/jfm.2020.443)
4. A. van Kan, T. Nemoto, A. Alexakis (2019): Rare transitions to thin-layer turbulent condensates, *J. Fluid Mech.*, 878, 356-369. [doi:10.1017/jfm.2019.572](https://doi.org/10.1017/jfm.2019.572)
3. A. van Kan, A. Alexakis (2018): Condensates in thin-layer turbulence, *J. Fluid Mech.*, 864, 490-518. [doi:10.1017/jfm.2019.29](https://doi.org/10.1017/jfm.2019.29)
2. A. van Kan, J. Jegminat, J. Donges, J. Kurths (2016): Constrained basin stability for studying transient phenomena in dynamical systems, *Phys. Rev. E* 93, 042205, [doi:10.1103/PhysRevE.93.042205](https://doi.org/10.1103/PhysRevE.93.042205)
1. S. Wang, R. Toumi, A. Czaja, A. van Kan (2015): An analytic model of tropical cyclone wind profiles, *Q. J. R. Met. Soc.*, [doi:10.1002/qj.2586](https://doi.org/10.1002/qj.2586)

SCHOLARSHIPS, AWARDS AND FELLOWSHIPS

AUG 2024	ICTAM 2024 Support Grant & Thomas J. R. Hughes Fellowship	(\$2.5k)
JUN-JUL 2024	Woods Hole Oceanographic Institution GFD Summer Program Staff Member	(\$1.6k)
JUN 2024	UC President's Lindau Nobel Laureate Meeting Fellowship	(\$5k)
MAR 2023	Financial support Isaac Newton Institute Workshop ADIW02 as Invited Speaker	(\$630)
APR 2023 - MAR 2025	DFG Walter Benjamin fellowship	(104k€)
JUL 2023	France-Berkeley Fund 2023 (with Edgar Knobloch and Alexandros Alexakis)	(\$12k)
APR 2023	Fellow of German Scholars Organization Leadership Academy	(\$5k)
MAR 2023	Mention spéciale du Prix de Thèse de l'Institut Océanographique de Monaco	(\$5k)
MAR 2023	Berkeley Postdoc Association Professional development award	(\$1.25k)
MAR 2023	American Physical Society Dissertation Award in Statistical & Nonlinear Physics	(\$3.5k)
SEP 2022	German Academic International Network conference stipend	(700€)
AUG-SEP 2022	SIAM Early Career Travel Award for SIAM NWCS22 conference	(\$1.3k)
NOV 2018 - OCT 2021	PhD scholar Ecole Doctorale Physique en Ile de France	(54k€)
NOV 2019 - OCT 2021	Studienstiftung PhD scholar	(2k€)
SEP 2017 - SEP 2018	DAAD annual fellowship & additional stipend by Studienstiftung	(12k€)
AUG - SEP 2016	DAAD & MOST Taiwan Summer Institute Programme scholarship	(3k€)
OCT 2015 - JUN 2016	Kurt Hahn Fellowship by Kurt Hahn Trust, Cambridge	(£3k)
JUN - AUG 2014	Kupcine-Getz International Science School scholarship	(1k€)
OCT 2013 - JUN 2014	Erasmus scholarship and Studienstiftung international stipend	(6k€)
FEB 2012 - OCT 2018	Bachelor's and Master's Scholar of Studienstiftung	(25k€)

CONFERENCES AND SCHOOLS

AUG 2024	ICTAM 2024 Meeting, Daegu, Korea, Invited Talk (30 mins) + Contributed Talk (20 mins)
MAR 2024	Isaac Newton Institute Workshop, Cambridge, UK, Invited Talk (50 min)
JAN 2024	US Dynamics Days, UC Davis, USA, Contributed Talk (15 min)
MAY 2023	SIAM DS23 Meeting, Portland, USA, Talk in Minisymposium (20 min)
MAR 2023	APS March Meeting, Las Vegas, GSNP Invited Talk – Dissertation Award (35 min)
MAR 2023	APS March Meeting, Las Vegas, Contributed Talk (15 mins)
NOV 2022	APS Division of Fluid Dynamics 75th Annual Meeting, Indianapolis (15 min) Appointed Session Chair: <i>Turbulence Theory</i>
SEP 2022	European Fluid Mechanics Conference 2022, Athens, Contributed Talk (15 min)
AUG - SEP 2022	SIAM Conference on Nonlinear Waves and Coherent Structures, Bremen, Talk (15 min) Appointed Session Chair: <i>Geophysical Systems</i>
JUL 2022	Hydrodynamics Across Scales School, Boulder (Colorado), USA, Poster presentation
MAY 2022	European Geosciences Union, Annual Meeting, Vienna, Austria, Contributed Talk (7 min)
NOV 2021	APS Division of Fluid Dynamics Meeting, Arizona, USA

SEP 2019 European Turbulence Conference, Turin, Contributed Talk (20 mins)
APR 2019 Les Houches New Challenges in Turbulence Research V, Poster presentation
OCT 2018 GDR Turbulence, Nice, France, Contributed Talk (20 mins)
JUN 2018 CISM Summer School on Wave Turbulence and Extreme Events, Udine, Italy
AUG 2017 Les Houches School Fundamental Aspects of Turbulence in Climate Dynamics

TALKS

- Seminar on *Tipping Points in Turbulence* at PIK Potsdam (hosted by Dr. Jonathan Donges)
- Nonlinear Physics Group Seminar at Ecole normale supérieure (1h), Nov 2023
- LFMA Seminar (hosted by Dr. Benjamin Miquel), Ecole Centrale de Lyon (1h), Nov 2023
- CeNoS Sonderkolloquium, Univ. Münster, *Lévy on-off intermittency* (1h), Aug 2022
- Group seminar Prof. Esposito, U. Luxemburg, *Critical transitions in anisotropic turbulence*, (1h) May 2022
- GAFD seminar, U. Colorado at Boulder, *Critical transitions in anisotropic turbulence* (1h), Apr 2022
- Nonlinear analysis & PDE seminar, U. Sofia Antipolis, Nice, *Lévy on-off intermittecy* (1h), Feb 2021
- CQD Special Seminar, U. Heidelberg, *Critical transitions in anisotropic turbulence* (1h), May 2019

SERVICE, OUTREACH AND LEADERSHIP

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| 2023 | Selected as Associate Editor for <i>Chaos: An Interdisciplinary Journal of Nonlinear Science</i> |
| 2023 | Fellow at German Scholars Organization's 7th Leadership Academy |
| 2023 | Selected as participant of UC Berkeley Scientific Leadership and Management Course |
| 2022-2023 | Compass Mentor for two freshman students: Regular discussions on courses, career |
| 2022 | Supervision of Undergraduate Research: |
| | - Mathi Raja (Junior), BPURS Award \$750. Publication in Phys. Rev. E |
| | - Lichuan Xu (Senior), BPURS Award \$750, Berkeley Pi2 \$5500, preprint submitted. |
| | - Dave Li (Exchange student from NTU Singapore), publication in prep. |
| | - Maya Ann Basu, BPURS \$750 |
| 2022 - now | Reviewer for <i>J. Fluid Mech.</i> , <i>Atmosphere</i> (MDPI) and the <i>European Physical Journal Plus</i> |
| MAR 2020 | Organizer of panel discussion on <i>Climate Change and Society</i> at Monaco Foundation, Paris, France (cancelled due to COVID) |