

Adrian VAN KAN

PERSONAL DATA

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EMPLOYMENT

NOV 2021 - NOW Postdoctoral researcher
Funded by the National Science Foundation (Grant DMS-2009563)
Department of Physics, UC Berkeley
Advisors: Edgar Knobloch (UC Berkeley), Keith Julien (U Colorado, Boulder)

EDUCATION

OCT 2018 - OCT 2021 PhD thesis, **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**
OCT 2016 - SEP 2018 Master of Science, PHYSICS at **Universität Heidelberg**
OCT 2015 - JUN 2016 Part III MATHEMATICS at DAMTP, **University of Cambridge**
Degree obtained: Master of Advanced Studies (Mathematics)
OCT 2013 - JUN 2014 Erasmus student in PHYSICS at **Imperial College London**
OCT 2011 - FEB 2015 Bachelor of Science, PHYSICS at **Universität Heidelberg**

PUBLICATIONS (PEER-REVIEWED)

The publications highlighted in [blue](#) have resulted from work done as part of my PhD dissertation.

14. [A. van Kan](#), B. Favier, K. Julien, E. Knobloch: Spontaneous suppression of inverse energy cascade in instability-driven two-dimensional turbulence (under review)
13. [A. van Kan](#), J. Jegminat, J. Donges: Estimating nonlinear stability from time series data (submitted)
12. [A. van Kan](#), F. Pétrélis: Lévy flight first passage times and Lévy on-off intermittency (in prep.)
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
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*. *Phil. Trans. R. Soc. A.* doi: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
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
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
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
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
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
3. [A. van Kan](#), A. Alexakis (2018): Condensates in thin-layer turbulence, *J. Fluid Mech.*, 864, 490-518. doi: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
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

PUBLICATIONS (CONFERENCE PROCEEDINGS)

3. **A. van Kan**, A. Alexakis, M. Brachet (2021): On-off intermittency due to parametric Lévy noise, *Rencontre du Nonlinéaire 2021*
2. **A. van Kan**, A. Alexakis (2019): Rare transitions to thin-layer turbulent condensates, *Rencontre du Nonlinéaire 2019*
1. **A. van Kan**, A. Alexakis (2018): Critical transitions in geometrically constrained incompressible turbulence, *Rencontre du Nonlinéaire 2018*,

SCHOLARSHIPS AND AWARDS

SEP 2022	German Academic International Network conference stipend (700€)
AUG-SEP 2022	SIAM Early Career Travel Award for SIAM NWCS22 conference (\$1300)
NOV 2018 - OCT 2021	PhD scholar Ecole Doctorale Physique en Ile de France (54k€)
NOV 2019 - OCT 2021	Studienstiftung PhD scholar (academic support +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	Kupcinet-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€)

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 Kohnen, Analysis 2, U. Heidelberg

CONFERENCES AND SCHOOLS

SEP 2022	European Fluid Mechanics Conference 2022, Athens, 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, Talk (7 min)
NOV 2021	APS Division of Fluid Dynamics Meeting, Arizona, USA
SEP 2019	European Turbulence Conference, Turin, Talk (20 mins)
APR 2019	Les Houches New Challenges in Turbulence Research V, Poster presentation
OCT 2018	GDR Turbulence, Nice, France Talk (20 mins)
JUN 2018	CISM Summer School on Wave Turbulence and Extreme Events, Udine, Italy, Jun 2018
AUG 2017	Les Houches School Fundamental Aspects of Turbulence in Climate Dynamics

INVITED TALKS

- CeNoS Sonderkolloquium, Univ. Münster, *Lévy on-off intermittency* (1h), Aug 2022
- Group seminar Prof. Massimiliano 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

PRIOR RESEARCH EXPERIENCE

SEP 2017 - SEP 2018	Master thesis Ecole Normale Supérieure, Paris Topic: <i>Dimensional transitions in incompressible turbulence</i> Supervisor: <i>Dr. Alexandros Alexakis, Prof. Gasenzer</i>
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AUG-SEP 2016	DAAD and MOST Taiwan Summer Institute Programme 2016 Institution: National Taiwan University, Taipei Topic: <i>Barotropic typhoon modelling, the role of the atmospheric boundary layer and turbulence</i> Supervisor: <i>Prof Hung-Chi Kuo</i>
JAN 2016 - MAY 2016	Part III Mathematics Essay, University of Cambridge Topic: <i>Resonant Amplification of Rossby Waves during Sudden Stratospheric Warmings</i> Supervisor: <i>Dr Peter Hitchcock</i>
MAR-JUN 2015	UROP internship at Imperial College London Topic part 1: <i>An analytic model of tropical cyclones (continued)</i> Topic part 2: <i>The gulf stream-troposphere connection</i> Supervisor: <i>Dr Arnaud Czaja</i>
SEP 2014 - FEB 2015	Bachelor thesis in Physics, Universität Heidelberg Topic: <i>The C operator in partially PT-symmetric quantum mechanics and a model of wedge coupling</i> Supervisor: <i>Prof Sandra Klevansky</i>
SEP 2013 - MAR 2015	German Academic Scholarship Foundation Working group: <i>Anthropogenic Climate Change</i> Topic: <i>Basin Stability and Constrained Basin Stability in conceptual models of climate physics</i> Supervisors: <i>Prof Jürgen Kurths und Dr Jonathan Donges</i>
JUN-AUG 2014	Kupcinet-Getz International Science School, Weizmann Institute of Science, Rehovot, Israel Topic: <i>Atmospheric Dynamics on Jupiter</i> Supervisor: <i>Dr Yohai Kaspi</i>
OCT 2013 - JUN 2014	One-year project in Space and Atmospheric Physics Group, Imperial College London Topic: <i>Comparison of a low-order Steady State Model of Tropical Cyclones with Hurricane Dean</i> Supervisor: <i>Dr Arnaud Czaja</i>

SERVICE AND OUTREACH

2022	Supervision of Undergraduate summer research project: Mathi Raja
2022 - now	Reviewer for the <i>Journal of Fluid Mechanics</i>
MAR 2020	Organizer of panel discussion on <i>Climate Change and Society</i> at Monaco Foundation, Paris, France (cancelled due to COVID)
2015	Coordinator of <i>Wirkcamp</i> , Heidelberg, Germany. Organized housing, food for 70 volunteers who participated in projects on ecology, social equity, inclusion and more

LANGUAGES

GERMAN:	Mother Tongue	MANDARIN:	Upper Intermediate	ENGLISH:	Fluent (C2)
SPANISH:	Intermediate (B1)	FRENCH:	Fluent (C2)	RUSSIAN:	Basic
				TIBETAN:	Basic