Curriculum Vitae July 18, 2019

René van Hout

Email: rene@technion.ac.il
Website: https://empfl.net.technion.ac.il

ACADEMIC DEGREES

Year	*Degree*	*Department*	*Institution*
2001	PhD	Fluid Mechanics and Heat Transfer	Faculty of Engineering, Department of Fluid Mechanics and Heat Transfer, Tel-Aviv University, Israel
1991	MSc	Mechanical Engineering	Department of Fluid Mechanics and Heat Transfer, Eindhoven University of Technology, The Netherlands.

ACADEMIC APPOINTMENTS

Years	*Position*	*Institution*
2012 - present	Assistant Professor with tenure	Technion – IIT, Faculty of Mechanical Engineering, Haifa, Israel
2006 - 2012	Assistant Professor	Technion – IIT, Faculty of Mechanical Engineering, Haifa, Israel
2005 - 2006	Lecturer	Afeka, Tel-Aviv Academic College of Engineering, Israel
2002 - 2005	Postdoctoral Fellow	Department of Mechanical Engineering, The Johns Hopkins University, Baltimore, USA

GUEST APPOINTMENTS

Institution	*Period*
École Polytechnique Fédérale de Lausanne, Switzerland	August 2009
Sabbatical leave at the Laboratory for Aero and Hydrodynamics, TU-Delft, The Netherlands	September 2014 – August 2015

PROFESSIONAL EXPERIENCE

Years	*Position*	*Place of employment*
1992 - 1993	Process engineer	NRF – Thermal Engineering, Uden, The Netherlands

RESEARCH INTERESTS

My research interests lie in the broad area of experimental fluid mechanics, heat transfer and (environmental) particle-laden flows and focus on:

- Canopy boundary layers
- Particle (solids, droplets or bubbles) – turbulence interactions
- Atmospheric particle (pollen) dispersal
- Wind/water erosion problems
- Fluid-structure interactions
- Impinging jets – Flow field and heat transfer
- Bluff body wakes

TEACHING EXPERIENCE

Tel-Aviv University

Years	*Course*	*Level*
1996 - 2001	Fluid Mechanics and Heat Transfer Laboratories	Undergraduate teaching assistant
1996 - 2001	Heat Transfer	Undergraduate teaching assistant

Afeka Tel-Aviv Academic Engineering College

Years	*Course*	*Level*
2005 -2006	Statics	Undergraduate
2005 - 2006	Mechanics of Materials	Undergraduate
2005 - 2006	Thermodynamics	Undergraduate

Technion - IIT

Years	*Course*	*Level*
2007-2009	Heat Transfer	Undergraduate
2007-2012	Experimental Methods Laboratories	Undergraduate
2008-2018	Convection Heat Transfer	Graduate
2009-2018	Thermodynamics I	Undergraduate
2013-2014	Thermodynamics II	Undergraduate
2010-2013	Turbulent Flows (newly developed)	Undergraduate/Graduate
2018-2019	Viscous flows (newly developed)	Graduate

DEPARTMENTAL ACTIVITIES

Years	*Activity*
2007	Active at Technion open day for new students
2007 - 2011	Seminar coordinator at the Faculty of Mechanical Engineering
2016 - 2017	Vice-dean of undergraduate studies at the Faculty of Mechanical Engineering

PUBLIC PROFESSIONAL ACTIVITIES

Years	*Activity*
2006 -present	Reviewer for professional journals including: International Journal of Multiphase Flow; International Journal of Heat & Mass Transfer; Agricultural and Forest Meteorology; Chemical Engineering Science; Proceedings of the National Academy of Sciences (PNAS); Transport in Porous Media; Energy; Physics of Fluids; Experiments in Fluids; PLOS-ONE; Flow, Turbulence and Combustion; Journal of Fluid Mechanics; Journal of Turbulence
2011 - 2015	Steering committee member of COST action FP1005: "Fibre suspension flow modeling", 2011 - 2015.
2016	Member of the scientific committee of the 9th International Conference on Multiphase Flow, Florence, Italy, May 22 to 27, 2016.
2019	Member of the scientific committee of the 10th International Conference on Multiphase Flow, Rio de Janeiro, Brasil, May 19 to 24, 2019.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Years	*Member*
2004 – 2005 2007 - present	American Physical Society
2008 - present	IAAR
2015- present	EuroMech
2018- present	American Association for Aerosol Research (AAR)

GRADUATE STUDENTS[1]

PhD students [5]
Completed theses [1]

2011 - 2016	Lilach Sabban	Experimental study on the interaction between rigid, heavy fibres and homogeneous, isotropic turbulence. [J24, J30, J39]

MSc students [14]
Completed theses [11]

2008-2011	Lilach Sabban	Measurements of pollen settling in quiescent air and in near homogeneous isotropic turbulence [J18, J20]
2008-2012	Javier Arca	Development of a digital holography system for the investigation of particle-fluid coupling in a turbulent flow [J27].
2007-2012	Alexander Krakovich	Nonlinear dynamics, instabilities, and vortex-induced vibration of a tethered sphere in a steady fluid flow [J16, J21, J26]. Winner of "Aaron and Ovadia Barzani" prize of excellency Co-advisor: Assoc. Prof. O. Gottlieb, Faculty of Mechanical Engineering.
2010-2012	Lior Eshbal	Experimental study of vortex-induced vibrations of a tethered sphere exposed to a steady, uniform flow [J21, J26]. "Brakim" program[2]
2009-2013	Amit Katz	Active flow control of vortex induced vibrations of a tethered sphere in a steady fluid flow [J22, J25]. Co-advisor: Assist. Prof. D. Greenblatt, Faculty of Mechanical Engineering
2012-2013	Boris Rabencov	Experimental investigation of bead dispersal in a turbulent boundary layer using time-resolved digital holography. "Brakim" program[1]. Graduated "cum laude" [J27, J28]
2013-2014	Assaf Cohen	Measurement of the dynamics of fibers settling in near homogeneous, isotropic air turbulence. "Brakim" program[1] [J24, J30].
2013-2017	Adi Amir	Design and optimization of an air-conditioning system based on nocturnal radiative cooling for small-scale data centers: thermal and economic aspects. [J35]
2013-2018	Tom David	Investigation of the wake dynamics of a stationary sphere in a uniform flow. [J37]
2017- 2019	Dani Kovalev	Tomographic PIV measurements of the flow field in the

[1] Primary adviser, unless otherwise mentioned
[2] Prestigious combined BSc/MSc program for talented students

		wake of a tethered sphere undergoing vortex induced vibrations. [J36]
2017- 2019	Sofi Kuperman	Measurement of the dynamics of inertial, rigid fibers in isotropic turbulence: rotation and translation. [J39]

ME Students (Master of Engineering without thesis) [1]
Completed final project [1]

2013-2014	Anna Abramov	Analysis and examination of the effects of parameters for improving the signal to noise ratio of digital holography of small particles in a turbulent flow.

PhD students [5]
Theses in progress [4]

2011 - present	Moti Raizner	Investigation of the flow and heat transfer dynamics of a jet with unsteady average mass flux impinging on a heated surface (PhD). Passed PhD candidacy exam. Thesis submitted June 2019. [J38, J40] Co-advisor: Emeritus Prof. G. Grossman, Faculty of Mechanical Engineering.
2016 - present	Lior Eshbal	Investigation of fluid forcing, energy generation and acoustic control on tethered spheres in uniform flow using tomographic PIV (PhD). Passed PhD candidacy exam. [J36, J37]. Expected thesis submission January 2020. Co-advisor: Assoc. Prof. D. Greenblatt, Faculty of Mechanical Engineering.
2018- present	Subhani Shaik	Fibre-turbulence interactions in a turbulent channel flow. PhD candidacy exam October 2019.
2019 - present	Ewelina Winiarska	Experimental study of the effect of spanwise landscape heterogeneities on the hydrological cycle in the atmospheric boundary layer. Co-advisor: Assist. Prof. D. Liberzon, Faculty of Civil and Environmental Engineering.

Theses in progress (*MSc*) [3]

2016- present	Amit Herskovitz	Experiments on the interaction between a freely moving sphere and a turbulent boundary layer. "Brakim program"
2018- present	Amir Loyevski	Stereoscopic micro-PIV measurements of respiratory flows in advanced biomimetic models of deep pulmonary acinar airways. "Brakim program", Co-advised by Assoc. Prof. J. Snitzman of the Faculty of Bio-Medical Engineering.
2018- present	Vladislav Rinsky	Measurement of rotational and translational dynamics of rigid fibers in a turbulent channel flow.

Undergraduate students final projects [14]

2007-2008	Gil Tov – Ly, Leonid Klebanov	Design, construction and setup of experimental facility for the measurement of the interaction between particles (drops or solids) and isotropic, homogeneous turbulence.
2007-2008	David Revivo, Assaf Geva	Design, construction and setup of small blow-down facility (windtunnel).
2008-2009	Yevgenya Pelts, Liat Barhum	High-speed measurements of the characteristics of micro-droplets generated by high-speed valve controlled micro nozzles.
2009-2010	Lior Eshbal	Vortex-induced vibrations of tethered structures, e.g. spheres and cylinders, exposed to a uniform flow. "Brakim" program[1], continued to MSc studies
2010-2011	Boris Rabencov	Measurements of particle dispersion in a turbulent boundary layer using digital holographic cinematography. "Brakim" program[1], continued to MSc studies
2011-2012	Artiom Zayats	Tomographic measurements of the flow field in the wake of a tethered sphere.
2012-2013	Assaf Cohen	Temporal and spatial measurements of the distribution and orientation of fibers in a turbulent boundary layer. "Brakim" program[1], continued to MSc studies
2016	Amit Herskovitz	Data analysis of Tomo-PIV measurements of a freely moving sphere in a turbulent boundary layer. "Brakim" program[1], continued to MSc studies
2016-2017	Michael Laufer	Numerical investigation of the heat transfer characteristics of bio-inspired rough walls exposed to external flows.
2017	Dani Kovalev	Preliminary tomographic measurements of the flow field in the near-wake of a tethered sphere. "Brakim" program[1], continued to MSc studies
2017	Sofi Kuperman	Measurement of the orientation and translation of rigid fibres in isotropic turbulence. "Brakim" program[1], continued to MSc studies
2017-2018	Barak-Chaim Sabagh	Effect of hydrophobic surface conditions on vortex-induced vibrations of a tethered sphere in uniform flow.
2018	Amir Loyevski	Stereoscopic micro-PIV measurements of respiratory flows in advanced biomimetic models of deep pulmonary acinar airways. "Brakim" program[1], continued to MSc studies. Co-advised by Assoc. Prof. J. Snitzman of the Faculty of Bio-Medical Engineering.

PostDoctoral Scientists [1]

2019	Dr. Anuphav Rawat	The Effect of Spanwise Landscape Heterogeneities on the Hydrological Cycle in the Atmospheric Boundary Layer Co-advisor: Assist. Prof. D. Liberzon, Civil and Environmental Engineering, Technion – IIT .

RESEARCH GRANTS

Years	*Funding agency and project*	*Amount*	*Principal Investigator(s)*
2007	Wolfson Family Charitable Trust Support of young investigators: Equipment grant	£258,366.-	R. van Hout
2007-2011	US-Israel Binational Science Foundation (BSF) "Pollen release mechanisms in ragweed (Ambrosia): Evolutionary aspects and implications for long distance pollen dispersal"	$180,000.-	R. van Hout & Prof. G. Brush (The Johns Hopkins University, Baltimore, USA)
2010 - 2014	Israel Science Foundation (ISF-915/10) "Aerodynamics of pine pollen release, dispersal and capture: the influence of morphological adaptations on pollination efficiency"	$230,000.-	R. van Hout
2014-2018	Israel Science Foundation (ISF-1596/14) "Measurement of the 3D flow dynamics and associated fluid forcing in the wake of a stationary and tethered sphere in a uniform flow"	$256,410	R. van Hout
2017 - 2019	Ministry of Energy "Development and evaluation of advanced measurements on particle-turbulence interactions for on-site modeling of radio-active material dispersal via aero- and hydro-dynamic pathways"	$182,000	R. van Hout
2019 - 2021	US-Israel Binational Science Foundation NSF-BSF Earth Sciences (GEO) The Effect of Spanwise Landscape Heterogeneities on the Hydrological Cycle in the Atmospheric Boundary Layer	$348,000	R. van Hout and D. Liberzon (Technion) W. Anderson (University of Texas at Dallas, USA)

2019 - 2023	Israel Science Foundation (ISF-2199/19) "Control of fiber orientation dynamics in the near-field of a coaxial (impinging) jet by flow structure manipulation"	ILS 1,080,000	R. van Hout

PUBLICATIONS

Theses

1. R. van Hout, 1991. Experimental study of hydrodynamic parameters in vertical upward slug flow. MSc-thesis, Eindhoven University of Technology, Faculty of Mechanical Engineering, Department of Fluid Mechanics and Heat Transfer, The Netherlands.
2. R. van Hout, 2001. Investigation of the hydrodynamic and statistical parameters in undeveloped gas-liquid slug flow. PhD-thesis, Tel-Aviv University, Faculty of Engineering, Department of Fluid Mechanics and Heat Transfer, Israel.

Refereed papers in professional journals[3]

J1. van Hout R, Shemer L, Barnea D, 1992. Spatial distribution of void fraction within the liquid slug and some other related slug parameters. Int. J. Multiphase Flow 18, 831-845. https://doi.org/10.1016/0301-9322(92)90062-L

J2. van Hout R, Barnea D, Shemer L, 2001. Evolution of statistical parameters of gas-liquid slug flow along vertical pipes. Int. J. Multiphase Flow 27, 1579-1602. https://doi.org/10.1016/S0301-9322(01)00016-7

J3. van Hout R, Gulitski A, Barnea D, Shemer L, 2002. Experimental investigation of the velocity field induced by a Taylor bubble rising in stagnant water. Int. J. Multiphase Flow 28, 579-596. https://doi.org/10.1016/S0301-9322(01)00082-9

J4. van Hout R, Barnea D, Shemer L, 2002. Translational velocities of elongated bubbles in continuous slug flow. Int. J. Multiphase Flow 28, 1333-1350. https://doi.org/10.1016/S0301-9322(02)00027-7

J5. van Hout R, 2002: Unsteady flow phenomena. Implications on the design of experimental facilities. Int. J. Multiphase Flow 28, 1581-1588. https://doi.org/10.1016/S0301-9322(02)00041-1

J6. van Hout, R, Barnea D, Shemer L, 2003. Evolution of hydrodynamic and statistical parameters of gas-liquid slug flow along inclined pipes. Chem. Eng. Sci. 58, 115-133. https://doi.org/10.1016/S0009-2509(02)00441-4

J7. van Hout R, Katz J, 2004. A method for measuring the density of irregularly shaped biological aerosols such as pollen. J. Aeros. Sci. 35, 1369-1384. https://doi.org/10.1016/j.jaerosci.2004.05.008

J8. Zhu W, van Hout R, Luznik L, Kang HS, Katz J, Meneveau C, 2006. A Comparison of PIV Measurements of Canopy Turbulence Performed in the Field and in a Wind Tunnel Model. Exp. Fluids 41, 309-318. https://doi.org/10.1007/s00348-006-0145-6

J9. Zhu W, van Hout R, Katz J, 2007. On the Flow Structure and Turbulence during Sweep and Ejection Events in a Windtunnel Model Canopy. Boundary-Layer Meteorol. 124, 205-233. https://doi.org/10.1007/s10546-007-9174-9

J10. Chamecki M, van Hout R, Meneveau C, Parlange MB, 2007. Concentration profiles of particles in the neutral and stratified atmospheric boundary layer. Boundary-Layer Meteorol. 125, 25-38. https://doi.org/10.1007/s10546-007-9194-5

[3] Undergraduate/Graduate students, PostDocs and Research assistants are underlined

J11. Yue W, Meneveau C, Parlange M, Zhu W, van Hout R, Katz J, 2007. A comparative quadrant analysis of turbulence in a plant canopy. Water Resour. Res. 43, W05422, https://doi.org/10.1029/2006WR005583.

J12. van Hout R, Zhu W, Luznik L, Katz J, Kleissl J, Parlange M, 2007. PIV measurements in the atmospheric boundary layer within and above a mature corn canopy; Part I: Statistics and energy flux. J. Atmos. Sci. 64, 2805-2824. https://doi.org/10.1175/JAS3989.1

J13. Zhu W, van Hout R, Katz J, 2007. PIV measurements in the atmospheric boundary layer within and above a mature corn canopy; Part II: Quadrant-Hole analysis. J. Atmos. Sci. 64, 2825-2838. https://doi.org/10.1175/JAS3990.1

J14. Yue W, Parlange M, Meneveau C, Zhu W, van Hout R, Katz J, 2007. Large eddy simulation study of turbulence structures within and above a corn canopy, using field- and plantscale representations. Boundary-Layer Meteorol. 124, 183-203. https://doi.org/10.1007/s10546-007-9173-x

J15. van Hout R, Chamecki M, Brush G, Katz J, Parlange M B, 2008. The influence of local meteorological conditions on the circadian rhythm of corn (Zea mays L.) pollen emission. Agric. For. Meteorol. 148, 1078-1092. https://doi.org/10.1016/j.agrformet.2008.02.009

J16. van Hout R., Krakovich A., Gottlieb O., 2010. Time resolved measurements of vortex-induced vibrations of a tethered sphere in uniform flow. Physics of Fluids 22, Vol. 8. https://doi.org/10.1063/1.3466660.

J17. van Hout R., 2010. Time resolved PIV measurements of the interaction of polystyrene beads with near-wall coherent structures in a turbulent channel flow. Int. J. Multiphase Flow 37, 346-357. https://doi.org/10.1016/j.ijmultiphaseflow.2010.11.004

J18. Sabban, L., van Hout, R., 2011. Measurements of pollen grain dispersal in still air and stationary, near homogeneous, isotropic turbulence. J. Aeros. Sci. 42, 867-882. https://doi.org/10.1016/j.jaerosci.2011.08.001

J19. van Hout, R., Katz, J., 2011. Measurements of mean flow and turbulence characteristics in high-Reynolds number counter-rotating Taylor-Couette flow. Physics of Fluids 23, 105102-1 to 11. https://doi.org/10.1063/1.3643738

J20. Sabban, L., Jacobson, N., van Hout, R., 2012. Measurement of pollen clump release and breakup in the vicinity of ragweed (A. confertiflora) staminate flowers. Ecosphere 3 (7): 65. http://dx.doi.org/10.1890/ES12-00054.1.

J21. Eshbal, L., Krakovich, A., van Hout, R., 2012. Time resolved measurements of vortex-induced vibrations of a positively buoyant tethered sphere in uniform water flow. Journal of Fluids and Structures 35, 185-199. https://doi.org/10.1016/j.jfluidstructs.2012.07.003

J22. van Hout, R., Katz, A., Greenblatt, D., 2012. Acoustic control of vortex-induced vibrations of a tethered sphere. AIAA Journal 51, 754-757. https://doi.org/10.2514/1.J052086

J23. van Hout, R., 2013. Spatially and temporally resolved measurements of bead resuspension and saltation in a turbulent channel flow. Journal of Fluid Mechanics 715, 389-423. https://doi.org/10.1017/jfm.2012.525

J24. van Hout, R, Sabban, L., Cohen, A., 2013. The use of high speed PIV and holographic cinematography in the study of fiber suspension flows. Acta Mechanica 224(8), https://doi.org/10.1007/s00707-013-0917-z

J25. van Hout, R., Katz, A., Greenblatt, D., 2013. Time-resolved PIV measurements of vortex and shear layer dynamics in the near wake of a tethered sphere. Physics of Fluids 25, 077102; https://doi.org/10.1063/1.4812181

J26. Krakovich, A., Eshbal, L., van Hout, R., 2013. Vortex dynamics and associated fluid forcing in the near wake of a light and heavy tethered sphere in uniform flow. Experiments in Fluids 54, 1615. https://doi.org/10.1007/s00348-013-1615-2

J27. Rabencov, B., Arca, J., van Hout, R., 2014. Measurement of polystyrene beads suspended in a turbulent square channel flow: Spatial distributions of velocity and number density.

International Journal of MultiPhase Flow 62, 110-122. http://dx.doi.org/10.1016/j.ijmultiphaseflow.2014.02.004

J28. Rabencov, B., van Hout, R., 2015. Voronoi analysis of beads suspended in a turbulent square channel flow. International Journal of MultiPhase Flow 68, 10-13. http://dx.doi.org/10.1016/j.ijmultiphaseflow.2014.09.007

J29. Jacobson, N., van Hout, R., 2016. Measurements of the flow in the near wake of a "rough", semi permeable prolate spheroid at intermediate Reynolds numbers. Eur. J. of Mechanics/B Fluids 57, 159-175. doi:10.1016/j.euromechflu.2015.12.009

J30. Sabban, L., Cohen, A., van Hout, R., 2017. Temporally resolved measurements of heavy, rigid fibre translation and rotation in nearly homogeneous isotropic turbulence. Journal of Fluid Mechanics 814, 42-68. doi:10.1017/jfm.2017.12

J31. Van Hout, R., Eisma, J., Elsinga, G.E., Westerweel, J., 2018. Experimental study of the flow in the wake of a stationary sphere immersed in a turbulent boundary layer. Physical Review Fluids 3, 024601, doi: 10.1103/PhysRevFluids.3.024601

J32. Van Hout, R., Rinsky, V., Grobman, Y., 2018. Experimental study of a round jet impinging on a flat surface: flow field and vortex characteristics in the wall jet. Int. J. of Heat and Fluid Flow 70, 41-58. doi:10.1016/j.ijheatfluidflow.2018.01.010 .

J33. Van Hout, R., Rinsky, V., Hershcovich, C, Grobman, Y., 2018. Outer layer characteristics of a radially expanding wall jet on smooth and dimpled surfaces. Int. J. of Heat and Fluid Flow, 72, 304-316. https://doi.org/10.1016/j.ijheatfluidflow.2018.06.011

J34. Van Hout, R., Rinsky, V., Sasson, N., Hershcovich, C, Tshuva, M., Grobman, Y., 2018. Axisymmetric jet impingement on a dimpled surface: Effect of impingement location on flow field characteristics. Int. J. of Heat and Fluid Flow, 74, 53-64. https://doi.org/10.1016/j.ijheatfluidflow.2018.09.010

J35. Amir, A., van Hout, R., 2019. A transient model for optimizing a hybrid, nocturnal sky radiation system. Renewable Energy 132, 370-380. https://doi.org/10.1016/j.renene.2018.07.114

J36. Eshbal, L., Kovalev, D., Rinsky, V., Greenblatt, D., van Hout, R., 2019. Tomo-PIV measurements in the wake of a tethered sphere undergoing VIV. Journal of Fluids and Structures. https://doi.org/10.1016/j.jfluidstructs.2019.02.003.

J37. Eshbal, L., Rinsky, V., David, T., Greenblatt, D., van Hout, R., 2019. Measurement of vortex shedding in the wake of a sphere at Re = 465. Journal of Fluid Mechanics 870, 290-315. https://doi.org/10.1017/jfm.2019.250

J38. Raizner, M., Rinsky, V., Grossman, G., van Hout, R., 2019. Heat transfer and flow field measurements of a pulsating jet impinging on a flat heated surface. Int. J. of Heat and Fluid Flow 77, 278-287. https://doi.org/10.1016/j.ijheatfluidflow.2019.04.010

J39. Kuperman, S., Sabban, L., van Hout, R., 2019. Inertial effects on the dynamics of rigid, heavy fibers in isotropic turbulence. Physical Review Fluids 4, 064301. https://doi.org/10.1103/PhysRevFluids.4.064301

J40. Raizner, M., Rinsky, V., Grossman, G., van Hout, R., 2019. The effect of jet pulsation on the flow field of a round impinging jet and the radially expanding wall jet. Int. J. of Heat and Mass Transfer 140, 606-619. https://doi.org/10.1016/j.ijheatmasstransfer.2019.06.024

Books and/or chapters in books

B1. Particles in Wall-Bounded Turbulent Flows: Deposition, Re-Suspension and Agglomeration. Chapter contribution title: Using Holography and Particle Image Velocimetry to Study Particle Deposition, Re-suspension and Agglomeration, 60 pp. Eds. J. P. Minier and J. Pozorski. Contributing chapter authors besides editors: C. Marchioli and C. Henry. Springer International Publishing AG Switzerland, 2017, 268 pp. https://doi.org/10.1007/978-3-319-41567-3

B2. van Hout, R., Eisma, J., Overmars, E., Elsinga, G.E., Westerweel, J., 2018. Experimental investigation of the interaction between a stationary rigid sphere and a turbulent boundary

layer. Multi-Phase Flow Phenomena and Applications, World Scientific Publishing Co Pte Ltd, Editors G. Ziskind and G. Yadigaroglu, pp 212. https://doi.org/10.1142/10635

Refereed papers in conference proceedings

C1. van Hout R, Barnea D, Shemer L, 2001. Evolution of length distributions along the pipe in vertical and inclined upward slug flow. Proceedings of the 4th International Conference on Multiphase Flow (ICMF-2001), May 27 to June 1, New Orleans Louisiana, USA.

C2. van Hout R, Barnea D, Shemer L, 2001. Evolution of two-phase slug flow in vertical and inclined pipes. Proceedings 5th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics Thessaloniki, Greece, September 24-28.

C3. Zhu W, van Hout R, Luznik L, Kang HS, Katz J, Meneveau C, 2005. Applying PIV for Measuring Turbulence just within and above a Corn Canopy. Proceedings of the 6th International Symposium on Particle Image Velocimetry (PIV-05), Pasadena, California, USA, September 21-23.

C4. van Hout R., Katz, J. 2007. PIV measurements of the velocity field in counter-rotating cylindrical Couette flow. Proceedings of the 4th Ankara International Aerospace Conference, September 10-12, METU Ankara, Turkey.

C5. van Hout R. 2010. Time-resolved PIV measurements of particle-flow interactions in a turbulent boundary layer. Proceedings of the 7th International Conference on Multiphase Flow (ICMF 2010), Tampa, FL USA, May 30-June 4.

C6. Sabban L., van Hout R. 2010. Measurement of pollen settling characteristics in near homogeneous isotropic turbulence. Proceedings of the 7th International Conference on Multiphase Flow (ICMF 2010), Tampa, FL USA, May 30-June 4.

C7. Hershcovich, C., van Hout, R., Rinsky, V., Laufer, M., Grobman, Y., 2017. Microclimate on building envelopes: wind tunnel and computational fluid dynamic analysis of basic and complex geometries. Symposium on Simulation for Architecture and Urban Design (SimAUD), May 22-24, Toronto, Canada.

C8. Raizner, M., Rinsky, V., van Hout, R., Grossman, G., 2018. Heat transfer and flow field measurements of a pulsating round jet impinging on a flat heated surface. Proceedings of the 9th Symposium of Turbulence, Heat and Mass Transfer (THMT 2018), July 10-13, Rio de Janeiro, Brasil. Begell-House Inc. (New-York).

C9. van Hout, R., Rinsky, V., Sasson, N., Hershcovich, C., Grobman, Y. J., Tshuva, M., Pustylnik, L., 2018. Flow field measurements of a round jet impinging on smooth and dimpled surfaces. Proceedings of the 9th Symposium of Turbulence, Heat and Mass Transfer (THMT 2018), July 10-13, Rio de Janeiro, Brasil. Begell-House Inc. (New-York).

C10. Eshbal, L., Kovalev, D., Rinsky, V., Greenblatt, D., van Hout, R., 2018. Tomo-Piv measurements of the flow field in the wake of a tethered sphere undergoing VIV. Proceedings of Bluff Body Wakes and Vortex-Induced Vibrations (BBVIV 7), July 3-6 Marseille, France.

Conference lecture presentations[4]

CL1. Zhu W., Luznik L., van Hout R., Katz J., 2004. PIV measurements of atmospheric turbulence above and within a corn canopy. AMS, 16th Symposium on Boundary Layers and Turbulence, August 9-13, Portland, ME, USA.

[4] Presenting author is typeset in italic

CL2. Yue W., Parlange M., Meneveau C., Zhu W., van Hout R., Katz J., 2004. Numerical Investigation of Turbulence Structures Within and Above A Corn Canopy Using Large Eddy Simulation. AMS, 16th Symposium on Boundary Layers and Turbulence, August 9-13, Portland, ME, USA.

CL3. van Hout R., Zhu W., Luznik L., Katz J., 2004. PIV measurements of atmospheric turbulence above and within a corn canopy. American Physical Society (APS), 57th Annual Meeting of the Division of Fluid Dynamics, November 21-23, Seattle, WA, USA.

CL4. Zhu W., van Hout R., Luznik L., Kang H. S., Katz J., Meneveau C., 2005. Applying PIV for Measuring Turbulence just within and above a Corn Canopy. 6th International Symposium on Particle Image Velocimetry, September 21-23, Pasadena, California, USA.

CL5. Yue W., Zhu W., van Hout R., Meneveau C., Parlange M., Katz J., 2005. A comparative quadrant analysis of canopy turbulence based on LES and field-PIV data. American Physical Society (APS), 58th Annual Meeting of the Division of Fluid Dynamics, November 20-22, Chicago, IL, USA.

CL6. van Hout R., Katz J., 2007. PIV measurements of the velocity field in counter- rotating cylindrical Couette flow. American Physical Society (APS), 60th Annual Meeting of the Division of Fluid Dynamics, November 18 – 20, Salt Lake City, Utah, USA.

CL7. van Hout R., Sabban, L., 2008. Pollen dispersal and capture mechanisms by wind pollinated (anemophilous) plants. 22nd Annual Meeting of the Israeli Association for Aerosol Research, December 24, Tel-Aviv, Israel.

CL8. van Hout, R., Krakovich, A., Gottlieb, O., 2009. Time resolved measurements of vortex-induced-vibration of a tethered sphere. American Physical Society (APS), 62nd Annual Meeting of the Division of Fluid Dynamics, November 22-24, Minneapolis, Minnesota, USA.

CL9. Sabban, L., van Hout, R., 2011. Measurements of pollen settling in quiescent air and in near homogeneous isotropic turbulence. The 24th Annual Meeting of the Israeli Association of Aerosol Research, February 23, Technion – IIT, Israel.

CL10. van Hout, R., 2011. TR-PIV measurements of polystyrene beads entrained in a turbulent water channel flow. Particles in Turbulence 2011. International Conference on Fundamentals, Experiments, Numerics and Applications, 16-18 March, Potsdam, Germany.

CL11. van Hout, R., Sabban, L., 2011. Experimental investigation of non-spherical pollen grain settling in near homogeneous isotropic turbulence. EUROMECH, 513th Colloquium on "Dynamics of non-spherical particles in fluid turbulence", April 6-8, Udine, Italy.

CL12. van Hout, R., Eshbal, L., Krakovich, A., Gottlieb, O., 2011. Experimental comparison of nonlinear vortex-induced vibration of buoyant and non-buoyant tethered spheres exposed to a uniform flow. 7th European Nonlinear Dynamics Conference, 24-29 July, Rome, Italy.

CL13. van Hout, R., Greenblatt, D., Katz, A., 2011. Active Control of Vortex Induced Vibrations of a Tethered Sphere in a Uniform Air Flow. American Physical Society (APS), 64th Annual Meeting of the Division of Fluid Dynamics, 20-22 November, Baltimore, USA.

CL14. Sabban, L., Jacobson, N., van Hout, R., 2012. Measurement of pollen clump release and breakup in the vicinity of ragweed (A. confertiflora) staminate flowers. The 25th Annual Meeting of the Israeli Association of Aerosol Research, 1st March, Weizmann Institute, Rehovot, Israel.

CL15. van Hout, R., Eshbal, L., Krakovich, A., 2012. Measurements of the non-linear vortex induced vibrations of a light tethered sphere in a uniform flow. 4th International Conference on Localization, Energy Transfer and Nonlinear Normal Modes in Mechanics and Physics, 1-5 July, Haifa, Israel.

CL16. Rabencov, B., Arca, J., van Hout, R., 2012. Investigation of bead dispersal in a turbulent flow using high-speed, digital holographic cinematography. 9th European Fluid Mechanics Conference, 9-13 september, Rome, Italy.

CL17. Krakovich, A., Eshbal, L., van Hout, R., 2012. VIV of a tethered sphere in a uniform flow: simultaneous measurements of sphere and flow dynamics. 9th European Fluid Mechanics Conference, 9-13 september, Rome, Italy.

CL18. Rabencov, B., Arca, J., van Hout, R., 2012. Lagrangian tracking of polystyrene beads entrained in a turbulent flow using single view, digital holographic cinematography. The 32nd Israeli Conference on Mechanical Engineering, Tel-Aviv University, 17-18 October.

CL19. Katz, A., van Hout, R., Greenblatt, D., 2012. Acoustic control of vortex-induced vibrations of a tethered sphere. The 32nd Israeli Conference on Mechanical Engineering, Tel-Aviv University, 17-18 October.

CL20. Sabban, L., van Hout, R., 2013. Time resolved measurements of fiber-flow interaction in near homogeneous isotropic turbulence. 26th Annual Meeting of the Israeli Association for Aerosol Research, Tel-aviv, Israel.

CL21. Cohen, A, Sabban, L., van Hout, R., 2013. High-speed holographic measurements of fiber trajectories and orientation in near homogeneous, isotropic turbulence. 26th Annual Meeting of the Israeli Association for Aerosol Research, Tel-Aviv, Israel.

CL22. Cohen, A., Sabban, L., van Hout, R., 2013. High speed holographic measurements of fiber trajectories and orientation in near homogeneous, isotropic turbulence. Particles in turbulence, International Conference on Fundamentals, Experiments, Numerics and Applications, 1-5 July, Eindhoven University of Technology, The Netherlands.

CL23. Sabban, L., van Hout, R., 2013. TR-PIV measurements of nylon fibers suspended in near homogeneous isotropic turbulence. Particles in turbulence, International Conference on Fundamentals, Experiments, Numerics and Applications, 1-5 July, Eindhoven University of Technology, The Netherlands.

CL24. van Hout, R., 2013. Measurements of bead resuspension and saltation in a turbulent channel flow. Particles in turbulence, International Conference on Fundamentals, Experiments, Numerics and Applications, 1-5 July, Eindhoven University of Technology, The Netherlands.

CL25. Katz, A., van Hout, R., Greenblatt, D., 2013. VIV of a tethered sphere in a steady flow: Near-wake flow and effect of active flow control on sphere dynamics. Bifurcations and instabilities in fluid dynamics, 5th International Symposium Technion - IIT, Haifa, Israel, July 8 – 11.

CL26. Sabban, L., Cohen, A., van Hout, R., 2013. Time resolved measurements of rigid fiber dispersion in near homogeneous isotropic turbulence. American Physical Society (APS), 66th Annual Meeting of the Division of Fluid Dynamics, 24-26 November, Pittsburgh, USA.

CL27. van Hout, R., 2013. Bead resuspension and saltation in a turbulent channel flow. American Physical Society (APS), 66th Annual Meeting of the Division of Fluid Dynamics, 24-26 November, Pittsburgh, USA.

CL28. Jacobson, N., van Hout, R., 2014, Experimental investigation of the flow field and pollen trajectories/deposition around ovulate pine cones. American Physical Society (APS), 67th Annual Meeting of the Division of Fluid Dynamics, 23-25 November, San Francisco, USA.

CL29. David, T., Rinsky, V., van Hout, R., 2015. Comparison between the wake characteristics of a stationary, smooth and rough sphere immersed in a flow at intermediate Reynolds numbers. The 33rd Israeli Conference on Mechanical Engineering (ICME 2015), Tel-Aviv, 2-3 March.

CL30. Jacobson, N., van Hout, R., 2015, Experimental investigation of the flow field and pollen trajectories/deposition around ovulate pine cones. The 33rd Israeli Conference on Mechanical Engineering (ICME 2015), Tel-Aviv, 2-3 March.

CL31. Sabban, L., Cohen, A., van Hout, R., 2015. Combined measurements of flow field and rigid fiber rotation/translation in near homogeneous isotropic turbulence. COST Action FP1005 Final Conference jointly with EUROMECH Colloquium 566: Anisotropic particles in turbulence, NTNU Trondheim, 9-11 June.

CL32. van Hout, R., Eisma, J., Overmars, E., Elsinga, G., Westerweel, J., 2015. Time-resolved Tomo-PIV measurements of the interaction between a stationary held sphere and a turbulent boundary layer. American Physical Society (APS), 68th Annual Meeting of the Division of Fluid Dynamics, 22-24 November, Boston, USA.

CL33. van Hout, R., Eisma, J., Overmars, E., Elsinga, G., Westerweel, J., 2016. Experimental investigation of the interaction between a stationary rigid sphere and a turbulent boundary layer. 9th International Conference on Multiphase Flow (ICMF 2016), May 22-27, Florence, Italy.

CL34. Sabban, L., Cohen, A., van Hout, R., 2016. Combined measurements of flow field and rigid, inertial fibre rotation/translation in near homogeneous isotropic turbulence. 9th International Conference on Multiphase Flow (ICMF 2016), May 22-27, Florence, Italy.

CL35. van Hout, R., Eisma, J., Elsinga, G., Westerweel, J., 2016. Tomo-PIV measurements of the near wake characteristics of a rigid, stationary sphere immersed in a turbulent boundary layer. 11th European Fluid Mechanics Conference, Seville, 13-16 September.

CL36. David, T., Rinsky, V., Eshbal, L., van Hout, R., Greenblatt, D., 2016. Experimental investigation of a sphere near-wake flow field at intermediate Reynolds numbers. 11th European Fluid Mechanics Conference, Seville, 13-16 September.

CL37. Eshbal, L., David, T., Rinsky, V., van Hout, R., Greenblatt, D., 2017. Tomo-PIV measurements of the flow field in the wake of a sphere. American Physical Society (APS), 70th Annual Meeting of the Division of Fluid Dynamics, 19-21 November, Denver, USA.

CL38. Raizner, M., Rinsky, V., van Hout, R., Grossman, G., 2018. Heat transfer and flow field measurements of a pulsating round jet impinging on a flat heated surface. 9th Symposium of Turbulence, Heat and Mass Transfer (THMT 2018), 10-13 July, Rio de Janeiro, Brasil.

CL39. van Hout, R., Rinsky, V., Sasson, N., Hershcovich, C., Grobman, Y. J., Tshuva, M., Pustylnik, L., 2018. Flow field measurements of a round jet impinging on smooth and dimpled surfaces. 9th Symposium of Turbulence, Heat and Mass Transfer (THMT 2018), 10-13 July, Rio de Janeiro, Brasil.

CL40. Eshbal, L., Kovalev, D., Rinsky, V., Greenblatt, D., van Hout, R., 2018. Tomo-Piv measurements of the flow field in the wake of a tethered sphere undergoing VIV. Bluff Body Wakes and Vortex-Induced Vibrations (BBVIV 7), 3-6 July, Marseille, France.

CL41. Kuperman, S., Sabban, L., van Hout, R., 2018. Measurement of the dynamics of inertial, rigid nylon fibers in isotropic turbulence. Xth International Aerosol Conference (IAC 2018), 2-7 September, Saint Louis, Missouri, USA.

CL42. Kuperman, S., Sabban, L., van Hout, R., 2019. Dynamics of Inertial, Rigid Nylon Fibers in Isotropic Turbulence. 10th International Conference on Multiphase Flow (ICMF 2019), 19-24 May, Rio de Janeiro, Brazil.

CL43. Eshbal, L., Kovalev, D., Rinsky, V., Greenblatt, D., van Hout, R., 2019. 3D flow field measurements in the wake of a tethered sphere undergoing VIV. 10th International Conference on Multiphase Flow (ICMF 2019), 19-24 May, Rio de Janeiro, Brazil.

CL44. Shaik, S., Kuperman, S., van Hout, R., 2019. Orientation dynamics of rigid fibres in a turbulent channel flow. 17th European Turbulence Conference (ETC 2019), 3-6 September, Torino, Italy.

Invited conference talks

CI1. *van Hout R.*, 2007. Experimental study of particle-turbulence interactions. 45th European Two-Phase Flow Group Meeting, 22-24 May, Toulouse, France.

CI2. *Van Hout, R.*, Arca, J., 2011. Development of a Digital Holography System for the Investigation of Particle Dispersal in a Turbulent Flow. 49th European Two-Phase Group Meeting, 29th May – 2nd June, Tel-Aviv, Israel.

Workshop invited lectures

WI1. Particles in Wall-Bounded Turbulent Flows: Deposition, Re-Suspension and Agglomeration. Short Course at the Doctoral Level, Invited lecturer at the International Centre for Mechanical Sciences (CISM), Udine, Italy, 14-18 September 2015.

Invited seminar lectures

SI1. Technion – IIT, Faculty of Chemical Engineering, Haifa, Israel. "Turbulent flow structure in canopies and its implications for atmospheric pollen transfer" (2007)

SI2. École Polytechnique Fédérale de Lausanne, Switzerland. "Turbulent flow structure in canopies and its implications for atmospheric pollen transfer" (2007)

SI3. The Volcani center, Bet Dagan, Israel. "The effect of canopy flow structure and meteorological conditions on atmospheric corn pollen emission" (2007)

SI4. Israel Institute for Biological Research, Ness Tziona, Israel. "The effect of canopy flow structure and meteorological conditions on atmospheric corn pollen emission" (2008)

SI5. École Polytechnique Fédérale de Lausanne, Switzerland. "Experimental Investigation of Particle-Turbulence Interactions" (2009)

SI6. Georgia Institute of Technology, George W. Woodruff School of Mechanical Engineering, Atlanta, USA. "Time resolved measurements of the interaction of polystyrene beads with near-wall coherent structures in a turbulent channel flow" (May 2012)

SI7. University of California, Berkeley, USA. Civil and Environmental Engineering, USA. "Time resolved measurements of the interaction of polystyrene beads with near-wall coherent structures in a turbulent channel flow" (May 2012)

SI8. Cornell University: Sibley School of Mechanical and Aerospace Engineering, USA. "Vortex-induced vibrations of a tethered sphere in uniform flow: Time-resolved measurements of self-excited sphere dynamics and wake characteristics" (May 2012)

SI9. University of Twente: Physics of Fluids, Netherlands. "PIV and holography measurements of particle dynamics in turbulent flows" (August 2013)

SI10. TU-Delft: Laboratory for Aero and Hydrodynamics, Netherlands. "Resuspension of polystyrene beads suspended in a turbulent channel flow" and "Measurement of pollen clump release and breakup in the vicinity of ragweed (A. confertiflora) staminate flowers" (October 2014, during Sabbatical at TU-Delft)

SI11. J.M.Burgers center contact group "Turbulence" meeting at TU-Delft, Netherlands. "Combined measurements of flow field and rigid fiber rotation/translation in near homogeneous isotropic turbulence" (June 27th 2015, during sabbatical at TU-Delft)

SI12. TU-Delft: Laboratory for Aero and Hydrodynamics, Netherlands. "Interaction between spheres and a turbulent boundary layer" (July 2015, during Sabbatical at TU-Delft)

Conference poster presentations

CP1. Zhu W., Luznik L., van Hout R., Katz J., 2003. PIV measurements of atmospheric turbulence and pollen dispersal above a corn canopy. American Geophysical Union (AGU) Fall meeting, December 8-12, Moscone Center West, San Francisco, USA.

CP2. van Hout R., Katz J., 2003. A method for measuring the density of irregularly shaped particles such as pollen. American Geophysical Union (AGU) Fall meeting, December 8-12, Moscone Center West, San Francisco, USA.

CP3. van Hout R., Zhu W., Katz J., 2005. Experimental study at increasing scales of the characteristics of corn (Zea Mays L.) pollen dispersal into the atmosphere. The 2005 BE Investigators Conference, "Understanding and Harnessing Complexity in the Environment", March 21-23, Washington, DC, USA.

CP4. van Hout R., Smith J., Chamecki M., Higgins C., Katz J., Parlange M., Brush G., 2005. The circadian rhythm of corn (Zea mays L.) pollen dispersal into the atmosphere and its relation with local meteorological conditions. The 2005 BE Investigators Conference, "Understanding and Harnessing Complexity in the Environment", March 21-23, Washington, DC, USA.

CP5. van Hout, R., Sabban, L., 2009. Experimental study on pollen settling characteristics in isotropic homogeneous turbulence. 6 – 11 September, European Aerosol Conference, Karlsruhe, Germany.

CP6. Krakovich, A., van Hout, R., Gottlieb O., 2010. Vortex-induced-vibrations of a tethered sphere: simultaneous high-speed measurements of sphere motion and vortex shedding mechanisms. Combined International Union of Theoretical and Applied Mechanics (IUTAM) and Bluff Body Wakes and Vortex-Induced Vibrations (BBVIV6), 22-25 June, Capri Island, Italy.

CP7. Jacobson, N., Sabban, L., van Hout, R., 2011. Wind tunnel measurements of pollen release and entrainment in the vicinity of ragweed (Ambrosia) flowers. The 24th Annual Meeting of the Israeli Association of Aerosol Research, 23rd February, Technion – IIT, Israel.

CP8. van Hout, R., Rabencov, B., Arca, J., 2011. Time resolved measurements of particle lift off from the wall in a turbulent water channel flow. American Physical Society (APS), 64th Annual Meeting of the Division of Fluid Dynamics, 20-22 November, Baltimore, USA.

CP9. Sabban, L., Cohen, A., van Hout, R., 2017. Temporally resolved measurements of heavy, rigid fibre translation and rotation in nearly homogeneous isotropic turbulence. European Aerosol Conference (EAC 2017), August 27 – September 1, 2017, Zürich, Switzerland.