
CURRICULUM VITÆ
CRISTIAN MARCHIOLI

• **General Information**

Date and place of birth: July 12, 1973; Udine (Italy);
Citizenship: Italian;
Phone: (office) +39 (0)432 558006; (cell.) +39 339 8575391;
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Marital status: married (2 daughters)

• **Education**

2003: Ph.D., Mechanical Engineering, University of Udine, Italy
1999: BS - MS, Industrial Engineering, University of Udine, Italy

• **Academic Positions and Qualifications**

2017: National Scientific Qualification (Abilitazione Scientifica Nazionale) to Full Professor of Fluid Mechanics in Italian Universities
2016 - present: Associate Professor of Fluid Mechanics, DPIA, University of Udine
2013: National Scientific Qualification (Abilitazione Scientifica Nazionale) to Associate Professor of Fluid Mechanics in Italian Universities
2010-2016: Senior Scientist & Assistant Professor of Fluid Mechanics, DIEG, University of Udine
2006: Guest Scientist, Dept. Multiscale Physics, Technische Universiteit, Delft (Ned)
2006: Guest Scientist, Dept. Mechanical Eng., Technische Universiteit, Eindhoven (Ned)
2004-2010: Adjoint Professor of Fluid Mechanics, Dept. Energy Technologies, University of Udine
2003-2009: Post-Doctoral Fellow, Dept. Energy Technologies, University of Udine

• **Honors, Grants and Awards**

2018: Invited speaker at the BIRS-CMO Workshop N. 18w5139 *New Frontiers in Multiphase CFD for the 21st Century Energy Mix*, Oaxaca (MX), August 19-24, 2018.
2018: Keynote speaker at *5th Int. Conf. Turbulence and Interactions (TI2018)*, La Martinique (FR), June 25-29, 2018
2018: Guest lecturer at *Symposium on Fluid Dynamics Modelling for Real World Applications* (EPSRC Centre for Doctoral Training in Fluid Dynamics, Director: Prof. P. Jimack), University of Leeds, Leeds (UK), June 20, 2018
2018: Invited seminar at *Linne Flow Centre, KTH*, Stockholm (SE), April 26, 2018
2017: Guest lecturer at *Flowing Matter* (COST-CISM Advanced Course, coordinated by B. Dollet & B. Mehlig), CISM, Udine (IT), September 25-29, 2017
2017: Invited seminar at *Institute of Mechanics, Beijing International Center for Theoretical and Applied Mechanics (BICTAM), Chinese Academy of Sciences*, Beijing (CHN), September 7, 2017
2017: Keynote speaker at *3rd Int. Conf. Numerical Methods in Multiphase Flow (ICNMMF-III)*, Tokio (JAP), June 26-29, 2017
2016: Invited seminar at *Institute of Fluid Mechanics and Heat Transfer*, TUWien, Wien (AT),

September 29, 2016

- 2015: Invited seminar at *Observatoire de la Cote d'Azur*, Nice (FR), November 2, 2015
- 2015: Invited speaker at *ERCOFTAC Autumn Festival 2015*, Vinci (IT), October 15-16
- 2015: Erasmus Teaching Mobility Grant (Course taught: *Subgrid-scale modeling for particle simulations in LES*), Université Pierre et Marie Curie (Paris VI), 03-05 March 2015
- 2014: Keynote speaker at *13th Int. Conf. Multiphase Flows in Industrial Plants (MFIP13)*, Sestri Levante (IT), September 17-19
- 2014: Invited speaker at *Nordita Conf. Dynamics of Particles in Flows*, Stockholm (SE), June 11-13
- 2012: Invited lecture at *50th European Two-Phase Flow Group Meeting*, Udine (IT), May 16-18
- 2011: Keynote lecture at *XX AIMETA Conference*, Bologna (IT), September 12-15
- 2011 - present: PI of IS CRA B/IS CRA C Grants (total standard hours granted: 1,5 millions)
- 2011: Standard HPC Tenders Grant CASPUR
- 2010: Recipient of the Young scientist 2008 best paper prize awarded by the University of Udine
- 2009: Invited lecture at *5th European-Japanese Two-Phase Flow Group Meeting*, Spoleto (IT), September 20-25
- 2005: Recipient of the 2003-2004 UIT (Unione Italiana di Termofluidodinamica) award for the best PhD thesis on Thermofluidynamics

• Specific Experience in Competitive Projects

- 2018: Principal Investigator of EID-ITN Project *Next-Generation Computational Methods for Enhanced Multiphase Flow Processes* (Proposal N. 813948 - Budget: 753.185 EUR)
- 2011-2015: Chairman of COST Project *Fibre suspension flow modelling - a key for innovation and competitiveness in the pulp and paper industry* (Budget: 435.700 EUR)

• Research Funds

PUBLIC FUNDING - Public funding is hierarchically obtained from all sources ranging from the local regional authority, to specific national research programmes and to specific competitive projects:

- UBE *Underwater Blue Efficiency* (05/2014 - 10/2016) - Call: PAR FSC 2007-2013, Linea d'Azione 3.1.2 "Miglioramento dell'offerta di ricerca, innovazione e trasferimento tecnologico", Azione 3.1.2.2 "Distretti tecnologici" (Ditenave) - Project Budget 499.700 EUR (RU Budget: 60.000 EUR).
- Nugenia + (Grant *FP7-EURATOM-FISSION*) *Simulation of two-phase flow patterns with a new approach based on Smoothed Particle Hydrodynamics* (03/2015 - 09/2016) - Call: FP7-Fission-2013 - Project Budget: 180.000 EUR (RU Budget: 70.000 EUR).
- COST Project *Fibre suspension flow modelling - a key for innovation and competitiveness in the pulp and paper industry* (05/2011 - 06/2015) - Project Budget: 435.700 EUR.
- Fondo Sociale Europeo - Misura D4 (Grant Funds 2003-2004) *Dispersion Mechanisms in the Gulf of Trieste: Interaction between Turbulence and Biological Processes* - Budget: 24.000 EUR

PRIVATE FUNDING - Private funding is obtained from contract research (contratti conto terzi) with industrial partners. Total funding is about 60.000 EUR from the following partners:

- Ardea s.r.l. (2017) *Analisi di sistemi per il contenimento delle emissioni di polveri da tramogge*.
- Meccanotecnica Veneta s.r.l. (2014) *Computational characterization of the lubro-refrigeration process of circular saw blades*.
- Boer Group (2011) *Analisi fluidodinamica di impianti di disoleazione esistenti e identificazione di linee-guida per l'ottimizzazione di progetto*.

- Aria s.r.l. (2007) *Analisi fluidodinamica per sistema di pulizia e igienizzazione delle canalizzazioni: studio della dinamica di un flusso d'aria in uscita da ugello destinato alla bonifica delle condotte.*

MISCELLANEOUS FUNDING

- 2016: Research grant for hosting 1 young researcher within the *Young Investigator Training Programme* funded by ACRI (4.000 EUR).

• Professional Activity

COORDINATOR of:

- *Anisotropic particles in viscous and turbulent flows* (CISM Summer School, July 1-5, 2019, CISM, Udine, Italy)
- *Fluid dynamics effects on particle formation in crystallization processes* (EFCE-Euromech Summer School, July 2-6, 2018, CISM, Udine, Italy)
- *Collective Dynamics of particles: from viscous to turbulent flows* (COST-ERCOTAC Training School, May 26-30, 2014, CISM, Udine, Italy)
- *Non-spherical particles and aggregates in fluid flows* (COST-ERCOTAC Training School, June 17-21, 2013, CISM, Udine, Italy)

INVITED LECTURER at:

- *Fluids Symposium: Fluid Dynamics Modelling for Real World Application* (Coordinator: P. Jimack, June 20, 2018, University of Leeds, UK)
- *Particles in wall-bounded turbulent flows: deposition, re-suspension and agglomeration* (Coordinators: J.P. Minier, J. Pozorski, September 14-18, 2015, CISM, Udine)
- COST Training School on *Regular and irregular non-spherical particles in laminar and turbulent flow* (Martin-Luther Universitat, Halle-Wittenberg, May 27-29, 2015)
- XIII UIT Summer School on *Thermo-fluid dynamics of two-phase systems* (Certosa di Pontignano, September 9-14, 2013)

ORGANIZER of scientific workshops, symposia and fora:

- Scientific Committee Member of the IUTAM Symposium on *Turbulent structure and particles-turbulence interaction*, Lanzhou, China, 26-29 June 2020
- Scientific Committee Member of the *1st Dispersed Two-Phase Flows Workshop (DTPF 2018)*, EN-SEEIHT Toulouse, 17-19 September 2018
- IUTAM Symposium on *Motile cells in complex environments*, May 15-18, 2018, Udine, Italy
- Special Symposium on *Modelling and Experimentation of Fibre Suspensions in Process Engineering* World Congress of Chemical Engineering (WCCE 10), 1-5 October 2017, Barcelona, Spain
- Scientific Committee Member of the *11th ERCOTAC Workshop on Direct and Large-Eddy Simulation (DLES11)*, 29-31 May 2017
- Scientific Secretary, Organizing Committee Member and Poster Competition Chair of the *9th International Conference on Multiphase Flow (ICMF 2016)*, 22-27 May 2016
- COST Action FP1005 Final Conference *Fiber Suspension Flow Modelling*, 9-11 June 2015, NTNU, Trondheim, Norway
- Section on *Interfacial Flows* at GAMM 86th Annual Scientific Conference, 23-25 March 2015, Grand Hotel Tiziano, Lecce, Italy
- Open forum on *Fluid-Particle Interactions in Turbulence* 4th Joint US-European Fluids Engineering Summer Meeting (FEDSM 2014), 3-7 August 2014

- Open forum on *Fluid Dynamic Behavior of Complex Particles* 4th Joint US-European Fluids Engineering Summer Meeting (FEDSM 2014), 3-7 August 2014
- 19th ERCOFTAC Alpe Danube Adria Pilot-Center Meeting 23 May 2014, CISM, Udine, Italy
- 6th Joint ERCOFTAC-COST Meeting on *Fiber suspension flow modelling*, 23-25 October 2013, University of Udine, Udine, Italy
- 1st Symposium on *Dispersed two-phase flows: Dispersion, deposition and agglomeration*, 11th Int. Conf. Numerical Analysis and Applied Mathematics, 21-27 September 2013, Rodos, Greece

VICE-COORDINATOR and MEMBER of the PhD Program Board *Environmental and Energy Engineering Sciences (Scienze dell'Ingegneria Energetica e Ambientale)*, University of Udine.

EDITOR of *Acta Mechanica* (April 2017 - present)

MEMBER of the Editorial Advisory Board of *Acta Mechanica* (October 2014 - March 2017)

MEMBER of ERCOFTAC SIG42 *Fiber Suspension Flow* Steering Committee

MEMBER of UIT (Unione Italiana di Termofluidodinamica), ASME (American Society of Mechanical Engineers), APS (American Physical Society), EUROMECH (European Mechanics Society)

MEMBER of the scientific council, academic council and board of directors of the International Center of Mechanical Sciences (CISM)

DIRECTOR of the Department of Fluid Dynamics of the International Center of Mechanical Sciences (CISM)

CORRESPONDING MEMBER for Italy of the Japanese Society of Multiphase Flow

REFERENCE PERSON for production and management of the following DATA REPOSITORIES:

- COST FP1005 - test case WG3: DNS of fiber-laden channel flow
- COST P20 - test case WG3: LES of particle-laden channel flow
- Picciotto, M., Marchioli, C. & Soldati, A. (2006) Database of particles dispersed in turbulent channel flow CFD database, CINECA, Italy (<http://cfd.cineca.it/cfd>)
- Marchioli, C., Picciotto, M. & Soldati, A. (2005) Velocity statistics in particle-laden turbulent vertical channel flow with and without lift. CFD database, CINECA, Italy (<http://cfd.cineca.it/cfd>)

REVIEWER for Scientific Journals:

- *Acta Mechanica*, *AIAA Journal*, *Advances in Colloid and Interface Science*, *Advances in Water Resources*, *Atmospheric Environment*, *Canadian Journal of Chemical Engineering*, *Chemical Engineering Science*, *Computational Geosciences*, *Computers & Fluids*, *Computer Methods in Applied Mechanics & Engineering*, *European Journal of Mechanics B/Fluids*, *Experiments in Fluids*, *Flow, Turbulence & Combustion*, *Fluid Dynamics Research*, *International Journal of Heat & Fluid Flow*, *International Journal of Heat & Mass Transfer*, *International Journal of Heat & Technology*, *International Journal of Modern Mathematics*, *International Journal of Multiphase Flows*, *International Journal for Numerical Methods in Fluids*, *International Journal of Thermal Sciences*, *Journal of Aerosol Science*, *Journal of Computational & Applied Mathematics*, *Journal of Computational Physics*, *Journal of Fluid Mechanics*, *Journal of Fluids Engineering*, *Journal of Fluids & Structures*, *Journal of Hazardous Materials*, *Journal of Non-Newtonian Fluid Mechanics*, *Journal of Physics A - Math. Gen.*, *Journal of Physics D - Applied Physics*, *Journal of Turbulence*, *Journal of Zhejiang University Science*, *Multiphase Science & Technology*, *New Journal of Physics*, *Nuclear Engineering and Design*, *Numerical Heat Transfer B*, *Particulate Science & Technology*, *Physical Review E*, *Physical Review Fluids*, *Physical Review Letters*, *Physics of Fluids*, *Physics Letters A*, *Plasma Science & Technology*, *Powder Technology*, *Progress in Energy & Combustion Science*, *Water*

REVIEWER for Governmental Bodies and Non-Profit Organizations:

- ANR (French National Research Agency, FR), Call: “JCJC - SIMI 9”
- SERI (State Secretariat for Education, Research and Innovation, CH), Call: “COST Research Proposal C10.0073”
- UEFISCDI (Executive Agency for Higher Education, Research, Development and Innovation Funding, RO), Call: “Research within Priority Sectors Programme - RO14”
- FWO (Research Foundation, Flanders, BE)
- ETAg (Estonian Research Council, EE), Call: “Norwegian-Estonian Research Cooperation Programme”
- NCN (Polish National Science Centre, PO), Call: “OPUS Funding scheme”
- CINECA Call: ‘Italian SuperComputing Resource Allocation - ISCRA’

OPPONENT of PhD Theses:

Extramural

- *Path and wake of cylinders falling in a liquid at rest or in a bubble swarm* (Defendant: Clement Toupoint, Advisors: Patricia Ern, Veronique Roig, Date: 29/11/2018, IMFT, Toulouse, FR)
- *Modélisation d’un jet chargé en nanoparticules à partir d’une fuite de canalisation de transport* (Defendant: Le-Hong Duc, Advisors: Pascal Fede, Eric Climent, Date: 04/06/18, IMFT, Toulouse, FR)
- *Development of a volume-penalty method for the simulation of bubbly flows* (Defendant: Antoine Morente, Advisor: Dominique Legendre, Date: 31/10/2017, IMFT, Toulouse, FR)
- *Particle accumulation structures in boundary-driven flows* (Defendant: Francesco Romanó, Advisor: Hendrik Kuhlmann, Date: 27/09/2016, TUWien, Wien, AT)
- *Doctorate in Chemical Engineering, Advanced Process Design and Modelling* (Defendants: G. Boccardo, M. Curti, M.M. Coletto, A. Pezzin, T. Zelenkova; Date: 30/01/2015, Politecnico di Torino)
- *Study of dilute suspension of non-spherical particles in turbulent flow* (Defendant: Afshin Abbasi Hoseini, Advisor: Helge Andersson, Date: 17/06/2014, NTNU, Trondheim, NO)

Intramural

- *Analysis of the drag reduction in turbulent viscosity-stratified flows* (Defendant: Somayeh Ahmadi, Advisor: Alfredo Soldati, Date: 12/03/2018, University of Udine, IT)
- *Direct Numerical Simulation of turbulence-interface interactions* (Defendant: Alessio Roccon, Advisor: Alfredo Soldati, Date: 12/03/2018, University of Udine, IT)
- *Convection in porous media* (Defendant: Marco De Paoli, Advisor: Alfredo Soldati, Date: 02/03/2017, University of Udine, IT)
- *Experimental investigation on the aerodynamic behavior of cooling channels for the leading edge of gas turbine blades* (Defendant: Luca Furlani, Advisor: Luca Casarsa, Date: 02/03/2017, Univ. Udine, IT)
- *Caratterizzazione ed ottimizzazione energetica di impianti per l’industria farmaceutica* (Defendant: Federico Olimpi, Advisor: Alfredo Soldati, Date: 02/03/2017, Univ. Udine, IT)
- *Heat transfer in gaseous micro-flows: conjugate heat transfer, rarefaction and compressibility effects* (Defendant: Michele Coppola, Advisor: Giulio Croce, Date: 30/03/2016, University of Udine, IT)
- *Analisi e sviluppo di modelli per la valutazione della dispersione di odori in contesti antropizzati* (Defendant: Nicola Pettarin, Advisor: Alfredo Soldati, Date: 30/03/2016, University of Udine, IT)
- *Experimental evaluation of biopolymer and synthetic polymer drag reduction in industrial scale facilities* (Defendant: Mattia Simeoni, Advisor: Alfredo Soldati, Date: 30/03/2016, Univ. Udine, IT)
- *Dynamics of passive and active particles at the surface of a stratified/unstratified turbulent open channel flow* (Defendant: Salvatore Lovecchio, Advisor: A. Soldati, Date: 10/05/2015, University of Udine, IT)
- *The tracer method and conductance probes to study stratified-dispersed flows in near horizontal pipes* (Defendant: Enrico Pitton, Advisor: Alfredo Soldati, Date: 10/05/2015, University of Udine, IT)

- *Development of hybrid continuum-kinetic solver for micro gas flow simulation* (Defendant: Olga Rovenskaya, Advisor: Giulio Croce, Date: 10/05/2015, University of Udine, IT)
- *Aerothermal numerical predictions of trailing edge and leading edge cooling channels* (Defendant: Matteo Pascotto, Advisor: Luca Casarsa, Date: 12/05/2014, University of Udine, IT)
- *Turbulence modulation by large deformable droplets* (Defendant: Luca Scarbolo, Advisor: Alfredo Soldati, Date: 12/05/2014, University of Udine, IT)

OPPONENT of Licentiate Theses:

- *Stability analysis of channel flow laden with small particles* (Defendant: Joy Klinkenberg, Advisors: Luca Brandt, Rick De Lange, Date: 07/10/2011, KTH, Stockholm, SE)

• Research

RESEARCH ACTIVITY

- 08/2017-09/2017: Visiting Professor, Department of Engineering Mechanics, School of Aerospace, Tsinghua University (Beijing, China)
- 04/2014-05/2014: COST visitor at Department of Mechanical Engineering, Norwegian University of Science and Technology (NTNU), Trondheim (Norway)
- 07/2012-08/2012: COST visitor at Department of Mechanical Engineering, Norwegian University of Science and Technology (NTNU), Trondheim (Norway)
- 09/2006-10/2006: HPC-Europa visitor at Department of Mechanical Engineering, Technische Universiteit (TUd), Delft (Netherlands)
- 01/2006-03/2006: HPC-Europa visitor at Department of Mechanical Engineering, Technische Universiteit (TUE), Eindhoven (Netherlands)
- 09/2001-06/2002: Visiting scholar at Department of Mechanical Engineering, The Johns Hopkins University, Baltimore (USA)

RESEARCH TOPICS

- Turbulent dispersion of particles, aerosols and bubbles: Fundamentals and applications.
- Numerical simulation (DNS, LES) of two-phase turbulent flows.
- Analysis and control of turbulent transfer mechanisms of mass, momentum and heat.
- Eulerian-Lagrangian methods, sub-grid modeling for particles

• Teaching

Note: Unless otherwise indicated, all courses listed below were delivered at the University of Udine

- 2017-pres. : Environmental transport phenomena (in English), M.S. Environmental & Energy Engineering
- 2017-pres. : Modelling of turbulent flows (Modellistica dei flussi turbolenti), M.S. Mechanical Engineering
- 2017-pres. : Numerical methods for transport equations (in English), PhD in Energy & Environmental Engineering Science
- 2013-pres. : Fluid mechanics (Fluidodinamica), B.S. Mechanical & Industrial Engineering
- 2012-2013 : Numerical methods for transport equations (Metodi numerici per le equazioni di trasporto), Scuola Superiore
- 2009-2011 : Adjoint Professor of Computational Fluid Mechanics (Fluidodinamica computazionale), Math. Phys. & Nat. Sci.
- 2002-2012 : Adjoint Professor of Fluid Mechanics (Fluidodinamica), Mechanical Engineering, CEPO

• Batchelor/Master/PhD Theses Supervised

- A.A. 1999-present : Co-Advisor of more than 60 B.S./M.S. Theses in Fluid Mechanics (Mechanical and Management Eng.), University of Udine, Italy
- A.A. 2003-present : Advisor of more than 30 B.S. Theses in Fluid Mechanics (Mechanical Engineering) Centro Polifunzionale di Pordenone, University of Udine, Italy
- A.A. 2015-present : Advisor of 2 PhD students (D. Dotto, cycle XXXI; A. Hajisharifi, cycle XXXIII), PhD in Energy and Environmental Engineering Science, University of Udine, Italy
- A.A. 2016-present : Co-Advisor of 2 PhD students (G. Soligo, cycle XXXII; M. Aliopur, cycle XXXIII), PhD in Energy and Environmental Engineering Science, University of Udine, Italy

• Scientific Production

CITATION REPORT (as of 25/09/2018)	Source: Scopus	★	WoS
Results found:	60	★	52
Number of journal publications:	35	★	35
Sum of the times cited:	1402	★	1289
Without self-citations:	1203	★	1104
H-index:	21	★	20

REFERRED JOURNAL PUBLICATIONS (PUBLISHED OR SUBMITTED OR IN PREPARATION)

- J41 **Marchioli, C.** (2018) Modelling and simulation approaches to fiber suspension flows, *Rev. Chem. Eng.* In preparation (solicited paper).
- J40 Lovecchio, S., **Marchioli, C.**, Brandt, L., Soldati, A. (2018) Gyrotactic cells in turbulent open channel flow. *Phys. Fluids*, In preparation.
- J39 Dotto, D., **Marchioli, C.** (2018) On the dynamics of flexible fibers in turbulent channel flow. *Acta Mechanica*, Under Review.
- J38 Mashayekpour, M., Nemat Lay, E., Lovecchio, S., **Marchioli, C.**, Soldati, A. (2018) Wind effect on gyrotactic micro-organism surfacing in free-surface turbulence. *Adv. Water Resour.*, In press (<https://doi.org/10.1016/j.advwatres.2017.09.001>).
- J37 Ravnik, J., **Marchioli, C.**, Soldati, A. (2018) Assessing the application limits of the Jeffery formulation for hydrodynamic torques acting on elongated particles in fluid turbulence, *Acta Mech.*, **229**, 827-839.
- J36 Lovecchio, S., Zonta, F., **Marchioli, C.**, Soldati, A. (2017) Thermal stratification hinders gyrotactic micro-organism rising in free-surface turbulence. *Phys. Fluids*, **29**, 053302.
- J35 Soligo, G., Wu, W., **Marchioli, C.**, Soldati, A., Piomelli, U. (2017) Particle resuspension by a periodically-forced impinging jet, *J. Fluid Mech.*, **820**, 284-311.
- J34 **Marchioli, C.** (2017) Large-eddy simulation of turbulent dispersed flow: A review of modelling approaches, *Acta Mech.*, **228**, 738-768 (solicited paper).
- J33 Innocenti, A., **Marchioli, C.**, Chibbaro, S. (2016) Lagrangian filtered density function for LES-based stochastic modelling of turbulent dispersed flows, *Phys. Fluids*, **28**, 115106.
- J32 **Marchioli, C.**, Zhao, L., Andersson, H.I. (2016) On the relative rotational motion between rigid fibers and fluid in turbulent channel flow, *Phys. Fluids*, **28**, 013301.
- J31 **Marchioli, C.**, Soldati, A. (2015) Turbulent breakage of ductile aggregates, *Phys. Rev. E*, **91**, 053003.
- J30 Babler, M.U., Biferale, L., Brandt, L., Feudel, U., Guseva, K., Lanotte, A.S., **Marchioli, C.**, Pecile, E., Picano, F., Sardina, G., Soldati, A., Toschi, F. (2015) Breakup of small aggregates in bounded and unbounded turbulent flows, *J. Fluid Mech.*, **766**, 104-128.
- J29 Zhao, L., **Marchioli, C.**, Andersson, H.I. (2014) Slip velocity of rigid fibers in wall-bounded turbulence, *Phys. Fluids*, **26**, 063302.

- J28 Chibbaro, S., **Marchioli, C.**, Salvetti, M.V., Soldati, A. (2014) Particle tracking in LES flow fields: Lagrangian conditional statistics of filtering error, *J. Turbul.*, **15**, Issue 1, 22-33.
- J27 **Marchioli, C.**, Soldati, A. (2013) Rotation statistics of fibers in wall shear turbulence, *Acta Mech.*, **224**, 2311-2329.
- J26 Zonta, F., **Marchioli, C.**, Soldati, A. (2013) Particle and droplet deposition in turbulent swirled pipe flow, *Int. J. Multiphase Flow*, **56**, 172-183.
- J25 Lovecchio, S., **Marchioli, C.**, Soldati, A. (2013) Time persistence of floating-particle clusters in free-surface turbulence, *Phys. Rev. E*, **88**, 033003.
- J24 **Marchioli, C.**, Soldati A. (2012) Sediment transport in steady turbulent boundary layers: Potentials, limitations, and perspectives for Lagrangian tracking in DNS and LES, *Adv. Water Resour.*, **48**, 18-30.
- J23 Pitton, E., **Marchioli, C.**, Lavezzo, V., Soldati, A., Toschi, F. (2012) Anisotropy in pair dispersion of inertial particles in turbulent channel flow, *Phys. Fluids*, **24**, 073305
- J22 Bianco, F., Chibbaro, S., **Marchioli, C.**, Salvetti, M.V., Soldati A. (2012) Intrinsic filtering errors of Lagrangian particle tracking in LES flow fields, *Phys. Fluids*, **24**, 045103.
- J21 Molin D., **Marchioli, C.**, Soldati, A. (2012) Turbulence modulation and microbubble dynamics in vertical channel flow, *Int. J. Multiphase Flow*, **42**, 80-95.
- J20 Zonta, F., **Marchioli, C.**, Soldati, A. (2012) Modulation of turbulence in forced convection by temperature-dependent viscosity, *J. Fluid Mech.*, **697**, 150-174.
- J19 Zhao, L., **Marchioli, C.**, Andersson, H.I. (2012) Stokes number effects on particle slip velocity in wall-bounded turbulence and implications for dispersion models, *Phys. Fluids*, **24**, 021705.
- J18 Bianco, F., Chibbaro, S., **Marchioli, C.**, Salvetti, M.V., Soldati A. (2011) Statistical properties of an ideal subgrid-scale correction for Lagrangian particle tracking in turbulent channel flow, *J. Phys. Conference Series*, **333**, 1-16.
- J17 Zonta, F., **Marchioli, C.**, Soldati, A. (2011) Time behavior of heat fluxes in thermally coupled turbulent dispersed particle flows, *Acta Mechanica*, **218**, 367-373.
- J16 **Marchioli, C.**, Fantoni, M., Soldati, A. (2010) Orientation, distribution and deposition of elongated, inertial fibers in turbulent channel flow, *Phys. Fluids*, **22**, 033301.
- J15 Soldati, A., **C. Marchioli, C.** (2009) Physics and modelling of turbulent particle deposition and entrainment: review of a systematic study, *Int. J. Multiphase Flow*, **35**, 827-839 (highly cited paper: 100+ citations).
- J14 **Marchioli, C.**, Salvetti, M.V., Soldati, A. (2008) Appraisal of energy recovering sub-grid scale models for large-eddy simulation of turbulent dispersed flows, *Acta Mech.*, **201**, 277-296.
- J13 **Marchioli, C.**, Salvetti, M.V., Soldati, A. (2008) Some issues concerning Large-Eddy Simulation of inertial particle dispersion in turbulent bounded flows, *Phys. Fluids*, **20**, 040603.
- J12 **Marchioli, C.**, Soldati, A., Kuerten, J.G.M., Arcen, B., Taniere, A., Goldensoph, G., Squires, K.D., Cargnelutti, M.F., Portela, L.M. (2008) Statistics of particle dispersion in direct numerical simulations of wall-bounded turbulence: results of an international collaborative benchmark test, *Int. J. Multiphase Flow*, **34**, 879-893 (highly cited paper: 100+ citations).
- J11 Zonta, F., **Marchioli, C.**, Soldati, A. (2008) Direct numerical simulation of turbulent heat transfer modulation in micro-dispersed channel flow, *Acta Mech.*, **195**, 305-326.
- J10 **Marchioli, C.**, Fantoni, M., Soldati, A. (2007) Influence of added mass on anomalous high rise velocity of light particles in cellular flow field. A note on the paper of Maxey (1987), *Phys. Fluids*, **19**, 098101.
- J9 **Marchioli, C.**, Armenio, V., Soldati, A. (2007) A simple and accurate scheme for fluid velocity interpolation on 3D curvilinear grids, *Computers and Fluids*, **36**, 1187-1198.
- J8 **Marchioli, C.**, Picciotto, M., Soldati, A. (2007) Influence of gravity and lift on particle velocity statistics and transfer rates in turbulent vertical channel flow, *Int. J. Multiphase Flow*, **33**, 227-251.
- J7 **Marchioli, C.**, Picciotto, M., Soldati, A. (2006) Particle dispersion and wall-dependent fluid scales in turbulent bounded flow: implications for local equilibrium models, *Journal of Turbulence*, **7**(60), 1-12.

- J6 **Marchioli, C.**, Armenio, V., Salvetti, M.V., Soldati, A. (2006) Mechanisms for deposition and resuspension of heavy particles in turbulent flow over wavy interfaces, *Phys. Fluids*, **18**, 025102.
- J5 Picciotto, M. **Marchioli, C.**, Soldati, A. (2005) Characterization of near-wall accumulation regions for inertial particles in turbulent boundary layers, *Phys. Fluids*, **17**, 098101.
- J4 Picciotto, M. **Marchioli, C.**, Reeks, M.W., Soldati, A. (2005) Statistics of velocity and preferential accumulation of micro-particles in boundary layer turbulence, *Nucl. Eng. & Des.*, vol. 235, 1239-1249.
- J3 Picciotto, M., **Marchioli, C.**, Soldati, A. (2004) Remarks on the distribution of inertial particles in the wall region of a turbulent boundary layer. *Multiphase Science and Technology*, vol. 16(4), 281-293.
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- C1 **Marchioli, C.**[†], Soldati, A., Salvetti, M. V. (2000) Analysis of the interaction between large-scale streamwise EHD structures and a turbulent boundary layer, *Proceedings of the 8th European Turbulence Conference*, Eds. C. Dopazo et al., pp. 964.

[†] Speaker.

NATIONAL/INTERNATIONAL COLLABORATIONS AND NETWORKING

1. Daniele Marchisio & Marco Vanni, Dip. Scienza Applicata e Tecnologia, Politecnico di Torino, Italy
Collaboration on modelling and simulation of liquid-liquid systems
2. Alfredo Soldati, Institute of Fluid Mechanics and Heat Transfer, TU Wien, Austria
Collaboration on modelling and simulation of three-phase flows
3. Sergio Chibbaro, Institut Jean Le Rond D'Alembert, Pierre et Marie Curie University, Paris, France
Collaboration on stochastic modelling of multiphase flow
4. Jean-Pierre Minier, R & D Division, Electricité de France (EDF), Chatou, France
Collaboration on stochastic modelling of multiphase flow
5. Jacek Pozorski, Institute of Fluid-Flow Machinery, Polish Academy of Sciences, Gdansk, Poland
Collaboration on modelling of turbulent droplet flows
6. Helge I. Andersson, Norwegian Institute of Science and Technology (NTNU), Trondheim, Norway
Collaboration on fiber suspension flows
7. Elisabeth Guazzelli & Laurence Bergougnoux, IUSTI CNRS, University of Aix-Marseille, France
Collaboration on fiber suspension flows
8. Ugo Piomelli, Faculty of Engineering and Applied Science, Queens University, Kingston, Canada
Collaboration on turbulent particle resuspension

9. Federico Toschi, Department of Physics, TUE, Eindhoven, The Netherlands
Collaboration on modelling and simulation of turbulent dispersed flows
10. Berend van Wachem, Institut für Verfahrenstechnik, Universität Magdeburg, Germany
Collaboration on force model for simulation of non-spherical particles in turbulence
11. Jos Derksen, Department of Chemical Engineering, University of Aberdeen, Aberdeen, UK
Collaboration on modelling and simulation of aggregates in turbulence
12. Lihao Zhao, Department of Engineering Mechanics, Tsinghua University, Beijing, China
Collaboration on modelling and simulation of photo-gyrotactic swimmers in turbulence

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