

CURRICULUM VITÆ

ALFREDO SOLDATI

born in Livorno (Italy) on May 30, 1963

married with Cinzia; daughter Livia (1996) and son Giulio (1997)

Professor of Fluid Mechanics

Head of Institut of Fluid Mechanics and Heat Transfer

Technische Universität Wien, Vienna, Austria¹

& Part-time Professor of Fluid Mechanics

Università di Udine, Udine, Italy²



RESEARCH INTERESTS

Physics and Engineering of Multiphase Turbulent Flows.

EDUCATION AND CIVIL SERVICE

1993: Dottorato di Ricerca (Ph.D., Dr.-Ing.), Chemical Engineering, Università di Pisa, Italia

1989: Laurea (B.S. and M.S., Dipl.-Ing.), Nuclear Engineering, Università di Pisa, Italia

1990: 12 Months Milit./Civil Service, *Corpo Nazionale Vigili del Fuoco*

1982: Maturità Classica, Liceo-Ginnasio Niccolini e Guerrazzi, Livorno, Italia

ACADEMIC RECORD (EXCERPTA)

2020 –: Head, Institute of Fluid Mechanics and Heat Transfer, TU Wien, Vienna Austria

2016 –: Universität Professor, Fluidmechanik, TU Wien, Vienna Austria

2014 – 2014: Visiting Scientist, Nordic Inst. Theoretical Physics, Stockholm (SE)

2013 – 2013: Visiting Scientist, Kavli Inst. Theoretical Physics, Santa Barbara, CA (US)

2013 – 2013: Guest Professor, Scuola Superiore Sant'Anna, Pisa, IT

2011 – 2011: Professeur Invité, Inst. National Polytechnique, Toulouse, FR

2008 – 2008: Professeur Invité, Ecole Polytechnique Federale de Lausanne, Lausanne, CH

2007 –: Professore Ordinario, Fluid Mechanics, Università di Udine, Udine, Italia – *Presently part-time*

2002 – 2006: Professore Associato, Chemical Engineering, Università di Udine, Udine, Italia

1993 – 2002: Ricercatore/Assistant Professor, Chemical Engineering, Università di Udine, Udine, Italia

1991 – 1995: Research Assistant/Associate, Dept. Chem. Eng. Univ. California at Santa Barbara, USA

PRIZES, HONORS, AWARDS AND FELLOWSHIPS

Fellow of the European Society of Mechanics – EUROMECH (Elected 2020)

Elected Member IUTAM Conference Committee (2020-2023)

Freeman Scholar Award, American Society of Mechanical Engineers – ASME (2020)

Rector, International Center for Mechanical Sciences, CISM, Udine (2019 – ...).

*International Prize and Gold Medal in memory of Professors Modesto Panetti and Carlo Ferrari
Accademia delle Scienze, Torino, Italia (2018).*

Österreich. Nationalkomitee für Theoret. und Angew. Mechanik (2016 – ...).

Chairman of the 9th International Conference on Multiphase Flows, 2013-2016, Firenze, Italy.

Lewis F. Moody Award, American Society of Mechanical Engineers – ASME (2015).

Fellow of the American Physical Society – APS (Elected 2013).

Chairman, Working Party Multiphase Flow, European Federation of Chemical Engineering (2011 – 2017).

Vice Secretary General, International Center for Mechanical Sciences, CISM, Udine (2010 – 2017).

Robert T. Knapp Award, American Society of Mechanical Engineers – ASME (2007)

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EDITORIAL APPOINTMENTS

2017 – : *International Journal of Multiphase Flow* Editor in Chief (with S. Balachandar)
2014 – 2017 : *ASME Journal of Fluids Engineering* Associate Editor
2005 – 2017 : *Acta Mechanica* Editor

PLENARY/KEYNOTE/INVITED TALKS & SEMINARS

Plenary/Keynote Talks: *IUTAM Symposium on Turbulent Structure and Particles-Turbulence Interaction*, Lanzhou (CN)-2021; *BICTAM-CISM Symposium on Dispersed Multiphase Flows: from Measuring to Modeling*, Beijing (CN)-2021; *ASME-FED Fluids Engineering Division Summer Meeting - ASME Freeman Scholar Lecture*, Orlando, FL (US)-2020; *The Sixth International Conference on Advanced Model Measurement Technology for the Maritime Industry*, Roma (IT)-2019; *21th Australasian Conference on Fluid Mechanics*, Adelaide (AU)-2018; *25th Convegno Italiano di Idraulica e Costruzioni Idrauliche*, Ancona (IT)-2018; *25th Japanese Society for Multiphase Flow Lecture Course* Tokyo (JP)-2017; *4th Int. Conf. on Turbulence and Interactions*, Cargèse, Corsica (FR)-2016; *3rd Polish Congress of Mechanics*, Gdansk, (PL)-2015; *Int. Symp. on Turbulence and Shear Flow Phenomena*, Melbourne (AU)-2015; *International Conference on Numerical Methods for Multiphase Flow*, Darmstadt (DE)-2014; *Particles in Turbulence*, Eindhoven (NL)-2014; *Direct and Large-Eddy Simulation. ERCOFTAC*, Dresden (DE)-2013; *Fluid-mediated particle transport in geophysical flows*, Kavli Institute, Santa Barbara, CA (US)-2013; *ECCOMAS*, Wien (AT)-2012; *Symposium on Multiphase Flow and Transport Phenomena*, Agadir (MO)-2012; *International Conference on Multiphase Flow*, Tampa, FL (US)-2010; *Workshop of Multiphase Flow and Mixing Phenomena*, Krakow (PL)-2007; *Italian Conference on Chemical and Process Engineering*, Giardini-Naxos (IT)-2005; *Gesellschaft für Angewandte Mathematik und Mechanik*, Dresden (DE)-2004.

Doctoral/Departmental Seminars: Over 100 Scientific Seminars in Departmental Seminar Programs and Doctoral Programs in International Academic Institutions (North America; Asia; Europe; Australia) and in Industrial and Technical Events (Europe).

ACADEMIC AND PROFESSIONAL SERVICES – PAST AND CURRENT

CINECA Scientific Panel (HPC Scientific Committee); Vice-Provost for Sport, Università di Udine; Director, Doctoral Program in Env. & Energy Engng Sciences, Università di Udine; Steering Committee, Excellence Programme School, (Scuola Superiore), Università di Udine; Member, Administrative Board of LOD Srl SpinOff of the Università di Udine (also Founder and Shareholder); Vice-Provost for Liaisons with Enterprises, Università di Udine; Italian representative Working Party Multiphase Flow, *European Federation of Chemical Engineering*; Director Interdepartmental center for Fluid Mechanics & Hydraulics, Università di Udine.

INTERNATIONAL ACADEMIC EVALUATION ROLES

Academic Recruitment/Promotion Committee at Professor level

USA: MIT, Boston, MA; University of California, Berkeley; University of Oklahoma;
SWEDEN: Chalmers University, Gothenburg;
UK: Newcastle University;
ISRAEL: Technion, Israel Institute of Technology;
CHINA: Tsinghua University, Beijing;
AUSTRALIA: Monash University, Melbourne;
AE: Masdar Institute of Science and Technology;
SLOVENIA: University of Maribor.
ITALY AND AUSTRIA: *Ex-officio* service in promotion, recruitment and habilitation committees.

International PhD Committee: President/Principal Opponent/Rapporteur (\simeq 20 PhD Defenses):

FRANCE: INP Toulouse (3); Université de Poitiers (1); Université de Lorraine (1); Université Aix-Marseille (1).

THE NETHERLANDS: TU Delft (3), TU Eindhoven (1)

NORWAY: Norwegian Technical University, Trondheim (4).

SWITZERLAND: EPFL, Lausanne (2); ETH Zürich (1).

SWEDEN: Chalmers University, Göteborg (1); Lund University, Lund (1).

SLOVENIA: University of Maribor (1).

GERMANY: TU Dresden (1).

ITALY AND AUSTRIA: *Ex-officio* service in PhD committees (\simeq 50 PhD Defenses).

Research Funds Evaluation Austrian Science Foundation; Christian Doppler Society; Estonian Science Foundation; European programmes: FP6 NEST; ISTC; Horizon 2020 ...; Agence Nationale pour la Recherche (ANR); Dutch Foundation for Fundamental Research on Matter (FOM); Israel Science Foundation (ISF); Italian Ministry of Research (PRIN/FIRB ...); Norway National Science Foundation; Swiss National Science Foundation; U.S. National Science Foundation; American Chemical Society; PRACE; POR/FESR; REPRISE (Italian Ministry for Research)

JOURNAL PAPERS, ISI WEB OF SCIENCE – CORE COLLECTION: 124 ENTRIES, H-INDEX 31

- 2021 125. P.H. Sichani, F. Zonta, and A. Soldati (2021) “Turbulent stratified flows at high Reynolds numbers”, *J. Fluid Mech.* (To be submitted).
124. M. Alipour, M. De Paoli, S. Ghaemi, and A. Soldati (2021) “Long non-axisymmetric fibers in turbulent channel flow”, *J. Fluid Mech.* (Re-submitted after review).
123. X. Zhang, F. Zonta, Z. F. Tian, G.J. Nathan, R.C. Chin, and A. Soldati (2021) “Dynamics of semi- and neutrally-buoyant particles in thermally stratified turbulent channel flows”, *Int. J. Multiphase Flow*, (Re-submitted after review).
122. G. Soligo, A. Roccon and A. Soldati (2021) “What Numerical Simulations can tell us about turbulent dispersed flows with drops and bubbles – Freeman Scholar Lecture”, *ASME J. Fluids Eng.*, **143**, 061103.
121. S. Pirozzoli, M. De Paoli, F. Zonta, and A. Soldati (2021) “Towards the ultimate regime in Rayleigh-Darcy convection”, *J. Fluid Mech.*, **911**, R4-13
120. A. Roccon, F. Zonta, and A. Soldati (2021) “Energy budget in lubricated drag-reduced turbulent channel flow”, *J. Fluid Mech.*, **911**, A37-36.
119. H. Hajisharifi, C. Marchioli, and A. Soldati (2021) “Particle capture dy drops in turbulent flow”, *Phys. Rev. Fluids*, **6**, 024303.
- 2020 118. P.H. Sichani, C. Marchioli, F. Zonta, and A. Soldati (2020) “Shear effects on scalar transport in double diffusive convection”, *ASME J. Fluids Eng.*, **142**: 121105.
117. S. Balachandar, S. Zaleski, A. Soldati, G. Ahmadi, L. Bourouiba (2020) “Host-to-Host Airborne transmission as a multiphase flow problem for science-based social distance guidelines”, *Int. J. Multiphase Flow*, **132**, 103439.
116. S. Balachandar and A. Soldati (2020) “Multiphase flow community must have a role in predicting host-to-host airborne contagion”, *Int. J. Multiphase Flow*, **132**, 103440
115. M. Alipour, M. De Paoli, and A. Soldati (2020) “Concentration-based Velocity Reconstruction of convective flows in Hele-Shaw cell”, *Exp. Fluids*, **61**:195.
114. G. Soligo, A. Roccon, and A. Soldati (2020) “Effect of surfactant-laden droplets on turbulent flow topology”, *Phys. Rev. Fluids*, **5**, 073606.
113. M. De Paoli, M. Alipour, and A. Soldati (2020) “How non-Darcy effects influence scaling laws in Hele-Shaw convection experiments”, *J. Fluid Mech.*, **892**, A41-15.
112. G. Soligo, A. Roccon, and A. Soldati (2020) “Deformation of clean and surfactant-laden droplets in shear flow”, *Meccanica*, **55**, 371-386.
111. D. Dotto, C. Marchioli, and A. Soldati (2020) “Deformation of flexible fibers in turbulent channel flow”, *Meccanica*, **55**, 343-356.
- 2019 110. C. Marchioli, H. Bhatia, G. Sardina, L. Brandt, and A. Soldati (2019) “Role of large-scale advection and small-scale turbulence on the vertical migration of gyrotactic swimmers”, *Phys. Rev. Fluids*, **4**, 124304.
109. G. Soligo, A. Roccon, and A. Soldati (2019) “Breakage, coalescence and size distribution of surfactant laden droplets in turbulent flow”, *J. Fluid Mechanics*, **881**, 244-282.
108. M. De Paoli, V. Giurgiu, F. Zonta, and A. Soldati (2019) “Universal behavior of scalar dissipation rate in confined porous media”, *Phys. Rev. Fluids*, **4**, 101501(R).

107. M. Mashayekhpour, C. Marchioli, S. Lovecchio, E.N. Lay, and A. Soldati (2019) "Wind effect on gyrotactic micro-organism surfacing in free-surface turbulence", *Adv. Wat. Res.* **129**, 328-337.
106. M. De Paoli, F. Zonta, and A. Soldati (2019) "Rayleigh-Taylor convective dissolution in confined porous media", *Phys. Rev. Fluids*, **4**, 023502.
105. A. Roccon, F. Zonta, and A. Soldati (2019) "Turbulent drag reduction by compliant lubricating layer", *J. Fluid Mechanics*, **863**, 1292-1311, R1.
104. G. Soligo, A. Roccon, and A. Soldati (2019) "Mass conservation-improved Phase Field Methods for turbulent multiphase flow simulation", *Acta Mechanica*, **230**, 683-696.
103. G. Soligo, A. Roccon, and A. Soldati (2019) "Coalescence of surfactant-laden drops by a Phase Field Method", *J. Comp. Phys.*, **376**, 1292-1311.
- 2018 102. S. Ahmadi, A. Roccon, F. Zonta, and A. Soldati (2018) "Turbulent drag reduction in channel flow with viscosity stratified fluids", *Computers & Fluids*, **176**, 260-265
101. F. Zonta and A. Soldati (2018) "Stably-stratified wall-bounded turbulence", *Appl. Mech. Rev.*, **70**, 040801-17.
100. S. Ahmadi, A. Roccon, F. Zonta, and A. Soldati (2018) "Turbulent drag reduction by a near wall, surface-tension-active interface", *Flow Turb. & Combustion*, **100**, 979-993.
99. C. Marchioli, J. Ravnik, and A. Soldati (2018) "Application limits of Jeffery's Theory for elongated particle torques in turbulence: a DNS assessment", *Acta Mechanica*, **229**, 827-839.
- 2017 98. A. Roccon, M. De Paoli, F. Zonta, and A. Soldati (2017) "Viscosity-modulated breakup and coalescence of large drops in bounded turbulence", *Phys. Rev. Fluids* **2**, 083603.
97. S. Lovecchio, F. Zonta, C. Marchioli, and A. Soldati (2017) "Thermal stratification hinders gyrotactic micro-organisms rising in free-surface turbulence", *Phys. Fluids*, **29**, 053302.
96. W. Wu, G. Soligo, C. Marchioli, A. Soldati, and U. Piomelli (2017) "Particle resuspension by a periodically-forced impinging jet", *J. Fluid. Mech.*, **820**, 284-311.
95. M. De Paoli, F. Zonta, and A. Soldati (2017) "Solute dissolution in anisotropic porous media: modelling convection regimes from onset to shutdown", *Phys. Fluids*, **29**, 026601.
94. G.A. Voth and A. Soldati (2017) "Anisotropic particles in Turbulence", *Annu. Rev. Fluid Mech.*, **49**:249-76.
- 2016 93. F. Zonta, M. Onorato and A. Soldati (2016) "Decay of gravity-capillary waves in air/water sheared turbulence", *Int. J. Heat & Fluid Flow*, **61**, 137-144.
92. J. Lupše, M. Campolo, A. Soldati (2016) "Modelling soot deposition and monolith regeneration for optimal design of automotive DPFs", *Chem. Eng. Sci.*, **151**, 36-50.
91. M. De Paoli, F. Zonta, and A. Soldati (2016) "Influence of anisotropic permeability on convection in porous media: Implications for geological CO₂ sequestration", *Phys. Fluids*, **28**, 056601.
90. L. Scarbolo, F. Bianco, and A. Soldati (2016) "Dynamics of a swarm of large droplets in a turbulent channel flow", *Eur. J. Mechanics B/Fluids*, **55**, 294-299
- 2015 89. N. Pettarin, M. Campolo and A. Soldati (2015) "Short term prediction of odor dispersion in urban environment", *Atmospheric Environment*, **122**, 74-82.
88. F. Zonta, A. Soldati and M. Onorato (2015) "Gravity-capillary waves growth and spectra in countercurrent air/water turbulent flow", *J. Fluid. Mech.*, **777**, 245-259.
87. L. Scarbolo, F. Bianco, and A. Soldati (2015) "Coalescence and breakup of large droplets in turbulent channel flow", *Phys. Fluids*, **27**, 073302.
86. C. Marchioli, and A. Soldati (2015) "Turbulent breakage of ductile aggregates", *Phys. Rev. E* **91**, 053003
85. L. Scarbolo and A. Soldati (2015) "Wall drag modification by large deformable droplets in turbulent channel flow", *Computers & Fluids* **113**, 87-92.
84. N. Aksel, H. Irschik, A. Soldati, G. J. Weng, F. Ziegler (2015) "Review and perspective in mechanics", *Acta Mechanica* **226**, 977.
83. M. Campolo, M. Simeoni, R. Lapasin, A. Soldati (2015) "Turbulent drag reduction by bio-polymers in large scale pipes", *ASME J. Fluids Eng.* **137**, 041102.
82. S. Lovecchio, F. Zonta, and A. Soldati (2015) "Upscale energy transfer and flow topology in free surface turbulence", *Phys. Rev. E* **91**, 033010.
81. M. Bäbler, L. Biferale, L. Brandt, U. Feudel, K. Guseva, A. Lanotte, C. Marchioli, F. Picano, G. Sardina, A. Soldati, F. Toschi (2015) "Numerical simulations of aggregate breakup in bounded and unbounded turbulent flows", *J. Fluid. Mech.* **766**, 104-128.
80. A. Capone, G.P. Romano, A. Soldati (2015) "Experimental investigation on interactions among fluid and rod-like particles in a turbulent pipe jet by means of Particle Image Velocimetry" *Exp. Fluids* **56**:1
- 2014 79. K.D. Nguyen, J. T. Jenkins & A. Soldati (2014) "Preface to Symposium THESIS-2013: Two-Phase Modeling of Sediment Dynamics", *Adv. Wat. Res.* **72**, 1-2.
78. S. Lovecchio, F. Zonta and A. Soldati (2014) "Influence of thermal stratification on the surfacing and clustering of floaters in free surface turbulence", *Adv. Wat. Res.* **72**, 22-31.

77. C. Bosshard, A. Dehbi, M. Deville, E. Leriche, R. Puragliesi and A. Soldati (2014) "Large eddy simulation of particulate flow inside a differentially heated cavity", *Nucl. Eng. & Des.* **267**, 154-163.
76. C. Marchioli, M.V. Salvetti, S. Chibbaro and A. Soldati (2014) "Conditional Lagrangian error in *a priori* Large Eddy Simulation of particles in turbulent bounded flows", *J. of Turbulence* **15**, Vol. 1, 22-33.
75. F. Zonta and A. Soldati (2014) "Effect of temperature dependent fluid properties on heat transfer in turbulent mixed convection", *ASME J. Heat Transfer* **136**, 022501. *ASME J. Heat Transfer* **136**, 022501.
- 2013 74. S. Lovecchio, C. Marchioli and A. Soldati (2013) "Time persistency of floating particle clusters in free-surface turbulence" *Phys. Rev. E* **88**, 033003.
73. F. Zonta, C. Marchioli and A. Soldati (2013) "Turbulence, particle dynamics and deposition in swirled pipe flow", *Int. J. Multiphase Flow* **56**, 172-183.
72. H.I. Andersson and A. Soldati (2013) "Anisotropic particles in turbulence: Status and Outlook", *Acta Mechanica* **224** 2219-2223.
71. C. Marchioli and A. Soldati (2013) "Rotation statistics of fibers in wall shear turbulence", *Acta Mechanica* **224** 2311-2329.
70. C. Bosshard, A. Dehbi, M. Deville, E. Leriche, R. Puragliesi and A. Soldati (2013) "Large eddy simulation of the differentially heated cubic cavity flow by the spectral element method" *Computers and Fluids* **86**, 210-227 .
69. Campolo, M. Curcio, F. and A. Soldati (2013) "Minimal perfusion flow for osteogenic growth of mesenchymal stem cells on lattice scaffolds", *AIChE J.* **59**, 3131-3144.
68. A. Capone, A. Soldati and G.P. Romano (2013) "The effect of Reynolds number on mixing and entrainment of turbulent round jets", *Exp. Fluids* **54**, art. no. 1434.
67. S. S. Dearing, M. Campolo, A. Capone, and A. Soldati (2013) "Phase discrimination and object fitting to measure fibers distribution and orientation in turbulent pipe flows", *Exp. Fluids* **54**, art. no. 1419.
66. L. Scarbolo, M. Sbragaglia, P. Perlekar, D. Molin, A. Soldati, F. Toschi (2013) "Unified framework for a side-by-side comparison of different multicomponent algorithms: lattice Boltzmann vs. phase field model", *J. Comp. Phys.* **239**, 263-279.
- 2012 65. A. Soldati, and C. Marchioli (2012) "Sediment transport in steady turbulent boundary layers: Potentials, limitations, and perspectives for Lagrangian tracking in DNS and LES", *Adv. Wat. Res.*, **24**, 18-30.
64. E. Pitton, C. Marchioli, V. Lavezzo, A. Soldati and F. Toschi (2012) "Anisotropy in Pair Dispersion of Inertial Particles in Turbulent Channel Flow", *Phys. Fluids*, **24**, 073305.
63. F. Zonta, M. Onorato and A. Soldati (2012) "Turbulence and internal waves in stably-stratified channel flow with temperature-dependent fluid properties", *J. Fluid Mech* , **697**, 175-203.
62. F. Bianco, C. Marchioli, M.V. Salvetti, S. Chibbaro and A. Soldati (2012) "Intrinsic sub-grid scale error in *a priori* Large Eddy Simulation of particles in turbulent bounded flows", *Phys. Fluids*, **24**, 045103 (Cover).
61. F. Zonta, C. Marchioli and A. Soldati (2012) "Modulation of forced convection turbulent flow by anisotropic temperature-dependent viscosity", *J. Fluid Mech.*, **697**, 150-174.
60. Molin, D., C. Marchioli and A. Soldati (2012) "Direct numerical simulation of momentum-coupled turbulent bubbly flow in vertical channel", *Int. J. Multiphase Flow*, **42**, 80-95.
59. Campolo, M., Molin, D., N. Rawal, and A. Soldati (2012) "Protocols to compare infusion distribution of wound catheters" , *Medical Eng. & Phys.* **34**, 326-332.
- 2011 58. R. Puragliesi, A. Dehbi, E. Leriche, A. Soldati, and M.O. Deville (2011) "DNS of buoyancy driven flows and Lagrangian particle tracking in a square cavity at high Raileigh numbers", *Int. J. Heat & Fluid Flow*, **32**, 915-931.
57. F. Zonta, C. Marchioli and A. Soldati (2011) "Time behavior of heat fluxes in thermally-coupled dispersed particle flows", *Acta Mechanica*, **218** 367-373.
56. A. Soldati, M. Campolo, F. Sbrizzai (2010) "Modeling nano-particle deposition in diesel engine filters", *Chem. Eng. Sci.*, **65** 6443-6451.
55. Lavezzo, V., Soldati, A., Geraschenko, S., Waarhaft, Z. and L. Collins (2010) "On the role of gravity and shear on inertial particle accelerations in near-wall turbulence", *J. Fluid Mech.*, **658** 229-246.
54. Marchioli, C., Fantoni, M. and A. Soldati (2010) "Influence of wall turbulence on orientation, dispersion and deposition of elongated fibers", *Phys. Fluids*, **22**, 033301.
53. R. IJzermans, M.W. Reeks, E. Meneguz, M. Picciotto and A. Soldati (2009) "Measuring segregation of inertial particles in turbulence by full Lagrangian approach" *Phys. Rev. E*, **80**, 015302.
52. A. Soldati and C. Marchioli (2009) "Physics and modelling of turbulent particle deposition and entrainment: review of a systematic study", *Int. J. Multiphase Flow*, **35**, 827-839.
51. M. Campolo, M. Andreoli and A. Soldati (2009) "Computation of reacting turbulent flow in an aerospace micro-rocket" *Microfluidics and Nanofluidics*, **6**, 881-898.
50. V. Lavezzo, R. Verzicco and A. Soldati (2009) "Ekman pumping and intermittent particle resuspension in a Direct Numerical Simulation of an unbaffled stirred tank" *Chem. Eng. Res. Des.* **87**, 557-564.

49. F. Sbrizzai, R. Verzicco and A. Soldati (2009) "Turbulent flow and dispersion of inertial particles in a confined jet issued by a long cylindrical pipe", *Flow Turb. & Combustion*, **82**, 1-23.
48. C. Marchioli, M.V. Salvetti and A. Soldati (2008) "Appraisal of Energy Recovering Sub-grid Scale Models for Large Eddy Simulation of Turbulent Dispersed Flows", *Acta Mech.*, **201**, 277-296.
47. C. Marchioli, A. Soldati, J.G.M. Kuerten, B. Arcen, A. Tanière, G. Goldensohn, K.D. Squires, M.F. Cargnelutti and L.M. Portela (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.
46. M. Campolo, A. Cremese and A. Soldati (2008) "Controlling particle dispersion in a transverse jet by synchronized injection", *AIChE J.*, **54**, 1975-1986.
45. C. Marchioli, M.V. Salvetti and A. Soldati (2008) "Some issues concerning Large-Eddy Simulation of inertial particle dispersion in turbulent bounded flows", *Phys. Fluids*, **20** 040603.
44. F. Zonta, C. Marchioli and A. Soldati (2008) "Direct Numerical Simulation of Turbulent Heat Transfer Modulation in Micro-Dispersed Channel Flow," *Acta Mech.*, **195** 305-326.
43. M. Campolo, M. Andreoli, L. Tognotti and A. Soldati (2007) "Modelling of a multiphase reacting turbulent jet: application to supersonic carbon injection in siderurgic furnaces", *Chem. Eng. Sci.*, **62** 4439-4458.
42. C. Marchioli, M. Fantoni and A. Soldati (2007) "Influence of added mass on high rise velocity of light particles in cellular flow field: A note on the paper of Maxey (1987)" *Phys. Fluids* **19** 098101
41. C. Marchioli, V. Armenio and A. Soldati (2007) "Simple and accurate interpolation scheme for particle tracking in curvilinear grids", *Computers and Fluids*, **36**, 1187-1198.
40. C. Marchioli, M. Picciotto and A. Soldati (2007) "Influence of gravity on particle wall segregation in vertical/horizontal turbulent channel flows", *Int. J. Multiphase Flow*, **32**, 227-251.
39. M. Picciotto, C. Marchioli, and A. Soldati (2006) "Lagrangian Timescale and Statistics for particle dispersion in wall bounded flows" *J. of Turbulence*, **7**, N60.
38. C. Marchioli, M.V. Salvetti, E. Armenio, and A. Soldati (2006) "Mechanisms for deposition and resuspension of particles in turbulent flow over wavy interfaces", *Phys. Fluids*, **18** Art.025102.
37. F. Sbrizzai, V. Lavezzo, R. Verzicco, M. Campolo and A. Soldati (2006) "DNS of Turbulence Dispersion of Inertial Particles in a Stirred Tank Reactor", *Chem. Eng. Sci.*, **61**, 2843-2851 .
36. M. Picciotto, C. Marchioli and A. Soldati (2005) "Characterization of near-wall accumulation regions for inertial particles in turbulent boundary layers", *Phys. Fluids*, **17** Art.098101.
35. F. Sbrizzai, E. Faraldi, and A. Soldati (2005) "Appraisal of 3D Numerical Simulation for sub-micron particle behavior in a microporous ceramic filter", *Chem Eng Sci.*, **60**, 6551-6563.
34. A. Giusti, F. Lucci, and A. Soldati (2005) "Influence of the lift force in direct numerical simulation of upward/downward turbulent channel flow laden with surfactant contaminated microbubbles," *Chem Eng. Sci.*, **60**, 6176-6187.
33. M. Campolo, G.M. Degano, L. Cortelezzi, and A. Soldati (2005) "Influence of Jet Inlet Conditions on Time-Average Behavior of Transverse Jets", *AIAA J.*, **43**, 1549-1555.
32. A. Soldati (2005) "Particles turbulence interactions in boundary layers", *J. Appl. Math. & Mech – ZAMM*, **85**, 683-699 (Solicited Review Paper).
31. M. Picciotto, C. Marchioli, M. Reeks and A. Soldati (2005) "Statistics of velocity and preferential accumulation of micro-particles in boundary layer turbulence" *Nucl. Eng. & Des.*, **235**, 1239-1249
30. M. Campolo, M.V. Salvetti, and A. Soldati (2005) "Mechanisms for Microparticle Dispersion in a jet in crossflow", *AIChE J.* **51**, 28-43.
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BOOKS

- D1 P. Andreussi e A. Soldati *Fluidodinamica di Processo*, Third Ed. (2010) Forum University Press, Udine, Italy; Second Ed. (2000) Edizioni ETS, Pisa, Italy; First Ed. (1996) Forum University Press, Udine, Italy.
- D2 A. Karagozian, L. Cortelezzi, and A. Soldati (Eds.) (2003) *Manipulation and Control of Jets in Cross-Flow* Springer Verlag, New York-Wien, 360 pp.
- D3 A. Soldati and R. Monti (Eds.) (2001) *Turbulence Structure and Modulation*, Springer Verlag, New York-Wien, 320 pp.

TEACHING ACTIVITY: SUPERVISION

D1 International Mentorship;

Jannike Solsvik 2019 – 2023 Mentor to the Outstanding Academic Fellows Programme at NTNU, Norway

D1 Post Docs/Scientists/Senior Scientists (18);

Alessio Roccon 2018 – ...

Marco De Paoli 2017 – ...

Francesco Zonta 2010 – ...

Giovanni Soligo 2019 – 2020, Present: Post Doc Okinawa Inst. of Science and Technology, JP

Mattia Simeoni 2016 – 2016

Salvatore Lovecchio 2015 – 2015

Luca Scarbolo 2014 – 2014,

Janez Lupše 2013 – 2014, Present: Analysis Engineer at AVL, Maribor, SL

Federico Bianco 2013 – 2014, Present: Danieli, (UD) Italy

Stella Silvana Dearing 2010 – 2013, Present: Honeybee robotics, USA

Fabio Sbrizzai 2004 – 2007, Present: Research Scientist, ASML, Eindhoven, NL

Dafne Molin 2009 – 2012, Present: PiQ² s.r.l., Brescia, IT

Francois Beux 2007 – 2008, Present: ALTA s.r.l., Pisa, Italy

Cristian Marchioli 2004 – 2010, Present: Univ. Udine, Assoc. Professor of Mech. Eng.

Michele Andreoli 2002 – 2005, Present: Computer Solutions, Bergamo, IT.

Alessandro Serra 2000 – 2002, Present: SIGEA, Udine, IT.

Stefano Cerbelli 1999 – 2000, Present: Univ. *La Sapienza* Roma, Assoc. Professor of Chem. Eng.

Marina Campolo 1999 – 2003, Present: Univ. Udine, Assoc. Professor of Chem. Eng.

D1 PhD Candidates (28);

George Giamagas, PhD 2023 (Expected),

Francesca Mangani, PhD 2023 (Expected),

Mobin Alipour, PhD 2021 (Expected),

Arash Hajisharifi, PhD 2021, Present: Post Doc at SISSA, Trieste, IT

Giovanni Soligo, PhD 2020, Present: Post Doc Okinawa Inst. of Science and Technology, JP

Harshit Bhatia, PhD 2019, Present: Post Doc at CEA, Paris-Saclay, FR

Somayeh Ahmadi, PhD 2018, Present: Process Engineer at Gasunie, Utrecht, NL

Alessio Roccon, PhD 2018, Present: Post Doc Univ. Udine and TU Wien, AT

Federico Olimpi, PhD 2017, Present: CO.ME.FRI. s.r.l., Udine, IT

Marco De Paoli, PhD 2017, Present: Univ. Assistant, TU Wien, AT

Mattia Simeoni, PhD 2016, Present: Project Manager, Bio Division – VivaBioCell, IT

Nicola Pettarin, PhD 2016, Present: ARCO Solutions, Trieste, IT

Enrico Pitton, PhD 2015, Present: Research Scientist, TEA Sistemi, Pisa, IT

Salvatore Lovecchio, PhD, 2015: Present: Data Scientist, Amadeus IT Group, Nice, FR

Luca Scarbolo, PhD 2014, Present: Research Scientist, General Electric, Firenze, IT

Alessandro Capone, PhD 2013, Present: Research Scientist, INSEAN, CNR, ROMA, IT

Riccardo Puragliesi, PhD 2010, Present: Lecturer SUPSI Univ. Appl. Sci. & Arts, Lugano, CH

Francesco Zonta, PhD 2010, Present: Univ. Assistant, TU Wien, AT

Antonio Romanazzi, PhD 2010, Present: Technical Management, Danieli, Buttrio, IT

Valentina Lavezzo, PhD 2009, Present: Senior Research Scientist, Philips, Eindhoven, NL

Luca Del Fabbro, PhD 2009, Present: High School Teacher, Pordenone, IT

Francesco Lucci, PhD 2009, Present: Philip Morris Prod SA, PMI R&D, Switzerland.

Silvia Rivilli, PhD 2005, Present: Technical Director LOD, S.r.l, Udine

Andrea Giusti, PhD 2005, Present: High School Teacher (UD), IT

Maurizio Picciotto, PhD 2005, Present: Engineering Manager, EMMEBI, Udine, IT

Fabio Sbrizzai, PhD 2004, Present: Research Scientist, ASML, Eindhoven, NL

Cristian Marchioli, PhD 2003, Present: Univ. Udine, Assoc. Professor of Mechanical Engineering

Marina Campolo, PhD 1999, Present: Univ. Udine, Assoc. Professor of Chemical Engineering

D2 Advisor of about 500 MS and BS Candidates;