

## CURRICULUM VITÆ

### ALFREDO SOLDATI

born in Livorno (Italy) on May 30, 1963

married with Cinzia, two kids, Livia (1996) and Giulio (1997)

Professor of Fluid Mechanics  
Technische Universität Wien, Vienna Austria<sup>1</sup>

### RESEARCH INTERESTS

Physics of Multiphase Turbulent Flows. Focus on environmental and industrial applications.

### 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  
1982: Maturità Classica, Liceo-Ginnasio Niccolini e Guerrazzi, Livorno, Italia  
1990: Milit./Civil Service, *Corpo Nazionale Vigili del Fuoco*, May 1990 – April 1991 (Roma/Pisa/Livorno)

### ACADEMIC RECORD (EXCERPTA)

- 2016 – .....: Universität Professor, Fluidmechanik, Technische Universität Wien, Vienna Austria  
2007 – .....: Professore Ordinario, Fluid Mechanics, Università di Udine, Udine, Italia – *Presently part-time*  
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  
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

- Freeman Scholar Award*, 2020, ASME – American Society of Mechanical Engineers.  
*Fellow of the European Society of Mechanics – EUROMECH* (Elected 2020)  
*Rector*, International Center for Mechanical Sciences, CISM, Udine (2019 – ... ).  
*International Prize and Gold Medal in memory of Professors Modesto Panetti and Carlo Ferrari* 2018, Accademia delle Scienze di Torino, Italia.  
*Österreich. Nationalkomitee für Theoret. und Angew. Mechanik* (2016 – ...).  
*Chairman of the 9<sup>th</sup> International Conference on Multiphase Flows*, 2013-2016, Firenze, Italy.  
*Lewis F. Moody Award*, 2015, ASME – American Society of Mechanical Engineers.  
*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*, 2007, ASME – American Society of Mechanical Engineers.



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## EDITORIAL APPOINTMENTS

2017 – .....	: <i>International Journal of Multiphase Flow</i>	Editor in Chief (with S. Balachandar)
2016 – 2017	: <i>International Journal of Multiphase Flow</i>	Associate Editor
2014 – 2017	: <i>ASME Journal of Fluids Engineering</i>	Associate Editor
2005 – 2017	: <i>Acta Mechanica</i>	Editor

## PLENARY/KEYNOTE/INVITED TALKS & SEMINARS

**Plenary/Keynote Talks:** *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, Australia-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*, Kreakow, (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 ( $\simeq$ 25 PhD Defenses):

FRANCE: INP Toulouse; Université de Poitiers; Université de Lorraine; Université Aix-Marseille.

THE NETHERLANDS: TU Delft.

NORWAY: Norwegian Technical University, Trondheim.

SWITZERLAND: EPFL, Lausanne; ETH Zürich.

SWEDEN: Chalmers University, Göteborg; Lund University, Lund.

SLOVENIA: University of Maribor.

GERMANY: TU Dresden.

ITALY AND AUSTRIA: *Ex-officio* service in PhD committees.

**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: 116 ENTRIES, H-INDEX 29

116. G. Soligo, A. Roccon, and A. Soldati (2020) Flow topology modifications of turbulence by surfactant-laden droplets ", *Phys. Rev. Fluids*, (Submitted).
115. A. Roccon, F. Zonta, and A. Soldati (2019) "Constant power input simulations of drag reduced viscosity stratified turbulent channel flow", *Flow Turb. & Combustion*, (Re-submitted after review).
114. P.H. Sichani, C. Marchioli, F. Zonta, and A. Soldati (2019) "Shear effects on scalar transport in double diffusive convection", *ASME J. Fluids Eng.*, (In Press).
113. M. De Paoli, M. Alipour, and A. Soldati (2019) "How non-Darcian effects influence scaling laws in Hele-Shaw convection experiments", *J. Fluid Mech.*, (In Press).
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.
110. C. Marchioli, H. Bhatia, G. Sardina, L. Brandt, and A. Soldati "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.
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.
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.
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 CO<sub>2</sub> 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
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. Bähler, 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
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.
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.

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 (Invited Paper).
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.
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 (Invited Paper).
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 (Invited Paper).
47. C. Marchioli, A. Soldati, J.G.M. Kuerten, B. Arcen, A. Tanière, G. Goldensoph, 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 (Invited Paper).
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.
29. M. Campolo and A. Soldati (2004) "Numerical evaluation of mixing time in a tank reactor stirred by a magnetically driven impeller", *Ind. Eng. & Chem. Res.*, **43**, 6836-6846.
28. F. Sbrizzai, R. Verzicco. M.F. Pidria and A. Soldati (2004) " Mechanisms for Selective Radial Dispersion of Microparticles in the Transitional Region of a Confined Turbulent Round Jet", *Int. J. Multiphase Flow*, **30**, 1389-1417.
27. C. Marchioli, A. Giusti, M.V. Salvetti, and A. Soldati (2003) "Direct Numerical Simulation of Particle Wall Transfer and Deposition in Upward Turbulent Pipe Flow, *Int. J. Multiphase Flow*, **29**, 1017-1038.
26. M. Campolo, P. Andreussi, and A. Soldati (2002) "Flood forecasting in the river Arno, *J. Hydrol. Sci*, **48**, 381-398.
25. M. Campolo, F. Sbrizzai, and A. Soldati (2003) "Time dependent fluid dynamics and Lagrangian tracking to model mixing in Rushton-impeller baffled-tank reactor", *Chem. Eng. Sci.*, **58**, 1615-1629.
24. C. Narayanan, D. Lakehal, L. Botto, and A. Soldati (2003) "Mechanisms of particle deposition in a fully-developed turbulent open channel flow", *Phys. Fluids*, **15**, 763-775.
23. A. Soldati (2003) "Cost/efficiency analysis of a wire-plate ESP with an advection diffusion equation for turbulent particle transport", *Aerosol Sci. and Technol.*, **37**, 171-182.
22. C. Marchioli and A. Soldati (2002) "Mechanisms for Particle Transfer and Segregation in Turbulent Boundary Layer", *J. Fluid Mech.*, **468**, 283-315.
21. F. Beux, A. Iollo, M.V. Salvetti, and A. Soldati (2002) "Analytical approximation and proper orthogonal decomposition for efficient computations of electrostatic fields in wire-plate precipitators", *IEEE Trans. Ind. Appl.*, **38**, 858-865.
20. M. Campolo, P. Andreussi, and A. Soldati (2002) "Water quality control in the river Arno", *Water Research*, **36**, 2674-2681.
19. A. Soldati, (2002) "Influence large-scale streamwise vortical EHD flows on wall turbulence," *Int. J. Heat Fluid Flow*, **23** 441-443.
18. M. Campolo and A. Soldati (2002) "Appraisal of Fluid Dynamic Efficiency of Retreated-Blade and Turbofoil Impellers in Industrial Size CSTR", *Ind. Eng. & Chem. Res.* **41** 1370-1377.
17. M. Campolo, A. Paglianti, and A. Soldati (2002) "Fluid Dynamic Efficiency and Scale-Up of a Retreated Blade Impeller CSTR", *Ind. Eng. & Chem. Res.* **41** 164-172.
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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 Post Docs/Scientists/Senior Scientists (17);

Alessio Roccon 2018 – ...  
 Marco De Paoli 2017 – ...  
 Francesco Zonta 2010 – ...  
 Mattia Simeoni 2016 – 2016  
 Salvatore Lovecchio 2015 – 2015  
 Luca Scarbolo 2014 – 2014  
 Janez Lupše 2013 – 2014

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  
 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 (26);

Gabriele Labanca, PhD 2022 (Expected),  
 Mobin Alipour, PhD 2021 (Expected),  
 Giovanni Soligo, PhD 2020 (Expected),  
 Harshit Bhatia, PhD 2019 Present: Post Doc at CEA, Paris-Saclay, FR,  
 Somayeh Ahmadi, PhD 2018, Present: Royal IHC, NL  
 Alessio Roccon, PhD 2018, Present: Post Doc Univ. Udine and TU Wien, AT

Federico Olimpì, 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: Plan 1 Health, Tolmezzo, 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: Research Scientist, Paul Scherrer Inst., Willigen, 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: Research Scientist, Philips, Eindhoven, NL  
Luca Del Fabbro, PhD 2009, Present: High School Teacher, Pordenone, IT  
Francesco Lucci, PhD 2009, Present: EMPA, Federal Lab. for Materials Testing & Research, CH  
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: Research Scientist, Danieli Research Ctr, Buttrio, 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;**