

## 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 and Director  
Institut of Fluid Mechanics and Heat Transfer, TU Wien, Vienna, Austria<sup>1</sup>  
& Part-time Professor of Fluid Mechanics Università di Udine, Udine, Italy<sup>2</sup>

### 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  
1989/90: 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: Invited Scientist, Nordic Inst. Theoretical Physics, Stockholm (SE)  
2013 – 2013: Invited 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 – *Currently 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 Conf. Committee (2020-2023)*  
*Freeman Scholar Award and Lecture, 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 9<sup>th</sup> 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:** *American Physical Society, DFD Annual Meeting*, Indianapolis (US)-2022; *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

Director, Institute of Fluid Mechanics and Heat Transfer, TU Wien; 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 Structures (departments etc)

SWISS: ETHZ, Mechanical and Process Engineering;

### Academic Recruitment/Promotion Committee at Professor level

GERMANY: TU Munich.

USA: MIT, Boston (3); Univ. California, Berkeley (1); Univ. Oklahoma (2); Johns Hopkins Univ. (1)

SWEDEN: Chalmers University, Gothenburg (3);

SWISS: EPFL, Lausanne (1);

UK: Newcastle University (1);

ISRAEL: Technion, Israel Institute of Technology (2);

CHINA: Tsinghua University, Beijing (2);

AUSTRALIA: Monash University, Melbourne (1);

AE: Masdar Institute of Science and Technology (1);

SLOVENIA: University of Maribor (2).

ITALY AND AUSTRIA: *Ex-officio* service in promotion, recruitment and habilitation committees.

### International PhD Committee: President/Principal Opponent/Rapporteur ( $\simeq$ 30 PhD Defenses):

FRANCE: INP Toulouse (4); Univ. Poitiers (1); Univ. Lorraine (1); Univ. Aix-Marseille (1),  
Univ. Pau–Pays de l’Adour (1).

GERMANY: TU Dresden (1), Univ. Bremen (1).

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

NORWAY: Norwegian Technical Univ., Trondheim (6).

SLOVENIA: Univ. of Maribor (2).

SWEDEN: Chalmers Univ., Gothenburg (1); Lund Univ., Lund (1).

SWITZERLAND: EPFL Lausanne (4); ETH Zürich (1).

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

**Research Funds Evaluation** Natural Sciences and Engineering Research Council of Canada; UK-EPSRC programme; Slovenian Research Agency (ARRS); 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: H-INDEX 35

- 135.
- 2023 134. M. Schenk, G. Giamagas, F. Zonta, A. Roccon, and A Soldati (2023) “Phase field simulation of turbulent dispersed flows via multiple resolution grids”, *Int. J. Multiphase Flow* (Submitted).
133. V. Giurgiu, G. Caridi, M. Alipour, M. De Paoli, and A Soldati (2023) “The TU Wien Turbulent Water Channel: channel flow loop for threedimensional reconstruction of anisotropic particle dynamics”, *Rev. Sci. Instruments* (Submitted).
132. M. Alipour, M. De Paoli, and A. Soldati (2023) “Universal scaling for tumbling rates of non-axisymmetric fibers in channel turbulence”, (Submitted).
131. G. Giamagas, F. Zonta, A. Roccon, and A Soldati (2023) “Propagation of capillary waves in two-layer turbulent wall-bounded flow”, *J. Fluid Mech.* (In Press).
- 2022 130. M. De Paoli, D. Perissutti, C. Marchioli and A. Soldati (2022) “Experimental assessment of mixing layer scaling laws in Rayleigh-Taylor instability”, *Phys. Rev. Fluids* **7**, 093503.
129. F. Zonta, P.H. Sichani, and A. Soldati (2022) “Interaction between thermal stratification and turbulence in channel flow”, *J. Fluid Mech.* **945**, A3-26.
128. M. De Paoli, S. Pirozzoli, F. Zonta, and A. Soldati (2022) “Strong Rayleigh-Darcy convection regime in three-dimensional porous media”, *J. Fluid Mech.* **943**, A51-21.
127. F. Mangani, G. Soligo, A. Roccon, and A. Soldati (2022) “Influence of density and viscosity on deformation, breakage and coalescence of bubbles in turbulence”, *Phys. Rev. Fluids*, **7**, 053601.
126. M. Alipour, M. De Paoli, and A. Soldati (2022) “Influence of Reynolds number on the dynamics of long non-axisymmetric fibers in channel flow turbulence”, *J. Fluid Mech.* **934**, A18-27.
125. A. Hajisharifi, C. Marchioli, and A. Soldati (2022) “Interface topology and evolution of particle patterns on deformable drops in turbulence”, *J. Fluid Mech.* **933**, A41-26.
124. J. Wang, F. Dalla Barba, A. Roccon, G. Sardina, A. Soldati and F. Picano (2022) “Modeling the direct virus exposure risk associated with respiratory events”, *J. R. Soc. Interface* **19**, 20210819.
- 2021 123. J. Wang, M. Alipour, G. Soligo, A. Roccon, M. De Paoli, F. Picano, and A. Soldati (2021) “Short-range exposure to airborne diseases and current guidelines”, *Proc. Natl. Acad. Sci.*, **118**, e2105279118.
122. G. Soligo, A. Roccon and A. Soldati (2021) “Turbulent Flows with Drops and Bubbles: What Numerical Simulations Can Tell Us – Freeman Scholar Lecture”, *ASME J. Fluids Eng.*, **143**, 080801.
121. M. Alipour, M. De Paoli, S. Ghaemi, and A. Soldati (2021) “Long non-axisymmetric fibers in turbulent channel flow”, *J. Fluid Mech.*, **916**, A3-32.

120. 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*, **139**, 103595.
119. 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
118. A. Roccon, F. Zonta, and A. Soldati (2021) "Energy budget in lubricated drag-reduced turbulent channel flow", *J. Fluid Mech.*, **911**, A37-36.
117. A. Hajisharifi, C. Marchioli, and A. Soldati (2021) "Particle capture by drops in turbulent flow", *Phys. Rev. Fluids*, **6**, 024303.
- 2020 116. 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.
115. 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.
114. 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
113. M. Alipour, M. De Paoli, and A. Soldati (2020) "Concentration-based Velocity Reconstruction of convective flows in Hele-Shaw cell", *Exp. Fluids*, **61**:195.
112. G. Soligo, A. Roccon, and A. Soldati (2020) "Effect of surfactant-laden droplets on turbulent flow topology", *Phys. Rev. Fluids*, **5**, 073606.
111. 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.
110. G. Soligo, A. Roccon, and A. Soldati (2020) "Deformation of clean and surfactant-laden droplets in shear flow", *Meccanica*, **55**, 371-386.
109. D. Dotto, C. Marchioli, and A. Soldati (2020) "Deformation of flexible fibers in turbulent channel flow", *Meccanica*, **55**, 343-356.
- 2019 108. 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.
107. 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.
106. 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).
105. 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.
104. M. De Paoli, F. Zonta, and A. Soldati (2019) "Rayleigh-Taylor convective dissolution in confined porous media", *Phys. Rev. Fluids*, **4**, 023502.
103. A. Roccon, F. Zonta, and A. Soldati (2019) "Turbulent drag reduction by compliant lubricating layer", *J. Fluid Mechanics*, **863**, 1292-1311, R1.
102. G. Soligo, A. Roccon, and A. Soldati (2019) "Mass conservation-improved Phase Field Methods for turbulent multiphase flow simulation", *Acta Mechanica*, **230**, 683-696.
101. 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 100. 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
99. F. Zonta and A. Soldati (2018) "Stably-stratified wall-bounded turbulence", *Appl. Mech. Rev.*, **70**, 040801-17.
98. 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.
97. 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 96. 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.
95. 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.
94. 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.
93. 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.
92. G.A. Voth and A. Soldati (2017) "Anisotropic particles in Turbulence", *Annu. Rev. Fluid Mech.*, **49**:249-76.
- 2016 91. 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.

90. 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.
89. M. De Paoli, F. Zonta, and A. Soldati (2016) “Influence of anisotropic permeability on convection in porous media: Implications for geological  $CO_2$  sequestration”, *Phys. Fluids*, **28**, 056601.
88. 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 87. N. Pettarin, M. Campolo and A. Soldati (2015) “Short term prediction of odor dispersion in urban environment”, *Atmospheric Environment*, **122**, 74-82.
86. 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.
85. L. Scarbolo, F. Bianco, and A. Soldati (2015) “Coalescence and breakup of large droplets in turbulent channel flow”, *Phys. Fluids*, **27**, 073302.
84. C. Marchioli, and A. Soldati (2015) “Turbulent breakage of ductile aggregates”, *Phys. Rev. E* **91**, 053003
83. L. Scarbolo and A. Soldati (2015) “Wall drag modification by large deformable droplets in turbulent channel flow”, *Computers & Fluids* **113**, 87-92.
82. 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.
81. S. Lovecchio, F. Zonta, and A. Soldati (2015) “Upscale energy transfer and flow topology in free surface turbulence”, *Phys. Rev. E* **91**, 033010.
80. M. Bäßler, 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.
79. 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 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.
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. 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.
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- D1 A. Soldati e C. Marchioli *Fluidodinamica*, (2021) Bononia University Press, Bologna, Italy.
- D2 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.
- D3 A. Karagozian, L. Cortelezzi, and A. Soldati (Eds.) (2003) *Manipulation and Control of Jets in Cross-Flow* Springer Verlag, New York-Wien, 360 pp.
- D4 A. Soldati and R. Monti (Eds.) (2001) *Turbulence Structure and Modulation*, Springer Verlag, New York-Wien, 320 pp.

## SCIENTIFIC MENTORING/SUPERVISION

### D1 International Mentorship;

Dr. Jannike Solsvik 2019 – 2023 Mentor for Outstanding Academic Fellows Programme NTNU, Norway

### D1 Post Docs/Scientists/Senior Scientists (12);

Dr. Giuseppe Caridi 2022 – ...

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

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

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

Dr. Dafne Molin 2009 – 2012, Present: PiQ<sup>2</sup> s.r.l., Brescia, IT

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

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

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

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

### D1 PhD Candidates (>30);

Leonel Beckedorff, PhD 2026 (Expected),

Umberto Baù, PhD 2026 (Expected),

Giurgiu Vlad, PhD 2025 (Expected),

George Giamagas, PhD 2024 (Expected),

Francesca Mangani, PhD 2023 (Expected),

Pejman Hadi-Sichani PhD 2022, Present: Post Doc, Rochester Univ., NY, US

Mobin Alipour, PhD 2021, Present: Post Doc, Yale Univ., New Haven, CT, US

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

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



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