Antonino Ferrante

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EDUCATION

2004 Ph.D. Mechanical and Aerospace Engineering, University of California, Irvine
1997 M.S. Aeronautics and Aerospace (with honors), von Kármán Institute for Fluid Dynamics, Belgium
1996 Laurea Ingegneria Aeronautica (summa cum laude), Università di Napoli 'Federico II', Italy

ACADEMIC POSITIONS

9/2015-Present	Associate Professor	University of Washington (AA)
7/2009-8/2015	Assistant Professor	University of Washington (AA)
3/2007-6/2009	Postdoctoral Scholar	California Institute of Technology (GALCIT)
3/2004-2/2007	Postdoctoral Scholar	University of California, Irvine (MAE)
9/1998-2/2004	Graduate Research Assistant	University of California, Irvine (MAE)
8/1997-8/1998	Research Assistant	Università di Napoli 'Federico II', Italy (AE)
9/1996-6/1997	Graduate Research Assistant	von Kármán Institute, Belgium (AA)

HONORS AND AWARDS

2012 **ICTAM Travel Fellowship Grant Award**
U.S. National Academies of Science (NAS)
2012 **Royalty Research Fund Award**
University of Washington (UW)
2011 **National Science Foundation (NSF) CAREER Award**
Office of CyberInfrastructure, Fluid Dynamics, Particulate and Multiphase Processes
2004 **Capability Application Project on IBM Power4+**
High-Performance Computing Modernization Program, Department of Defense (HPCMP/DoD)
2003 **Gallery of Fluid Motion, Video Entry Award**
American Physical Society, Division of Fluid Dynamics
2003 **Dissertation Fellowship Award**
Henry Samueli School of Engineering, University of California, Irvine
1998 **Study Abroad Fellowship Award**
Università di Napoli 'Federico II', Italy
1997 **Belgian Government Prize & Diploma with Honors**
von Kármán Institute for Fluid Dynamics, Belgium

RESEARCH

- Multiphase turbulent flows, wall-bounded turbulence, chemically-reacting and high-speed flows
- Direct Numerical Simulation (DNS) and Large-Eddy Simulation (LES) of turbulent flows
- Computational fluid dynamics (CFD) and high-performance computing (HPC)

PUBLICATIONS IN REFEREED JOURNALS

https://www.aa.washington.edu/research/cfm/publications/journals

J15. Dodd M. & Ferrante A.
"On the interaction of Taylor lengthscale size droplets and isotropic turbulence"
***Journal of Fluid Mechanics**, Vol. 806, pp. 356-412 (2016)*

J14. Dodd M. & Ferrante A.
"A fast pressure-correction method for incompressible two-fluid flows"
***Journal of Computational Physics**, Vol. 273, pp. 416–434 (2014)*

J13. Baraldi A., Dodd M. & Ferrante A.
"A mass-conserving volume-of-fluid method: volume tracking and droplet surface-tension in isotropic turbulence"
Computers & Fluids, *Vol. 96, pp. 322-337 (2014)*

J12. Lucci F., L'Vov V., Ferrante A., Rosso M. & Elghobashi S.
"Eulerian-Lagrangian bridge for the energy and dissipation spectra in isotropic turbulence"
Theoretical and Computational Fluid Dynamics, *July 2013, pp.1-17 (2013)*

J11. Lucci F., Ferrante A. & Elghobashi S.
"Is Stokes number an appropriate indicator for turbulence modulation by particles of Taylor-length-scale size?"
Physics of Fluids*, Vol. 23, 025101, pp. 1-7 (2011)*

J10. Ferrante A., Matheou G. & Dimotakis P.
"LES of an inclined sonic jet into a turbulent crossflow at Mach 3.6"
Journal of Turbulence*, Vol. 12, N. 2, pp. 1-32 (2011)*

J09. Lucci F., Ferrante A. & Elghobashi S.
"Modulation of isotropic turbulence by particles of Taylor-lengthscale size"
Journal of Fluid Mechanics*, Vol. 650, pp.5-55 (2010)*
Featured article in "***Focus on Fluids***" of J. Fluid Mechanics, Vol. 650, pp. 1-4 (2010)

J08. Ferrante A. & Elghobashi S.
"On the accuracy of the two-fluid formulation in DNS of bubble-laden turbulent boundary layers"
Physics of Fluids*, Vol.19, 045105, pp.1-8 (2007)*

J07. Ferrante A. & Elghobashi S.
"On the effects of microbubbles on the Taylor-Green vortex flow"
Journal of Fluid Mechanics*, Vol.572, pp.145-177 (2007)*

J06. L'vov V.S., Pomyalov A., Ferrante A. & Elghobashi S.
"An analytical model for temporally-developing turbulent boundary layers"
Journal of Experimental and Theoretical Physics Letters*, Vol. 86, pp.102-107 (2007)*

J05. Ferrante A. & Elghobashi S.
"Reynolds number effect on drag reduction in a microbubble-laden spatially developing turbulent boundary layer"
Journal of Fluid Mechanics*, Vol.543, pp.93-106 (2005)*

J04. Ferrante A., Elghobashi S., Adams P., Valenciano M., Longmire D.
"Evolution of Quasi-Streamwise Vortex Tubes and Wall-Streaks in a Bubble-Laden Turbulent Boundary Layer over a Flat Plate"
Physics of Fluids*, Vol.16, n.9, S2 (2004)*

J03. Ferrante A. & Elghobashi S.
"On the physical mechanisms of drag reduction in a spatially developing turbulent boundary layer laden with microbubbles"
Journal of Fluid Mechanics*, Vol.503, pp.345-355 (2004)*

J02. Ferrante A. & Elghobashi S.
"A robust method for generating inflow conditions for direct simulations of spatially developing turbulent boundary layers"
Journal of Computational Physics*, Vol.198, pp.372-387 (2004)*

J01. Ferrante A. & Elghobashi S.
"On the physical mechanisms of two-way coupling in particle-laden isotropic turbulence"
Physics of Fluids, *Vol.15, n.2, pp.315-329 (2003)*

CONFERENCE PAPERS

https://www.aa.washington.edu/research/cfm/publications/conferencePapers

PROCEEDINGS

https://www.aa.washington.edu/research/cfm/publications/proceedings

STUDENTS

https://www.aa.washington.edu/research/cfm/people

Graduated Ph.D.

2017 Michael Dodd (Postdoctoral Scholar at the Center for Turbulence Research, Stanford University)
2014 Barrett McCann (Faculty at the U.S. Air Force Academy)

TEACHING

https://www.aa.washington.edu/research/cfm/teaching

AA402 – Fluid Mechanics (Fall)
AA543 – Computational Fluid Dynamics (Winter)
AA544 – Turbulence Modeling & Simulation (Spring)
AE520 – Intro to Fluid Dynamics (Winter 2014)
AE598 – Computational Aerodynamics (Winter 2015, 2017)

PROFESSIONAL ACTIVITIES & SERVICES

a) Reviewer for premiere journals
b) Scientific Committee Member for the International Conference of Multiphase Flows 2016
c) Chair for sessions of the APS-DFD and AIAA Aerospace Science Meetings
d) Cyber Fluid Dynamics: DNS Database *http://cfmdatabase.aa.washington.edu/*
e) Member of the Undergraduate, Computer & Strategic Committees in AA at the UW
f) Professional memberships: American Physical Society (APS), American Institute of Aeronautics & Astronautics (AIAA), Institute of Electrical and Electronics Engineers (IEEE)