



Professor Tayfun E. Tezduyar

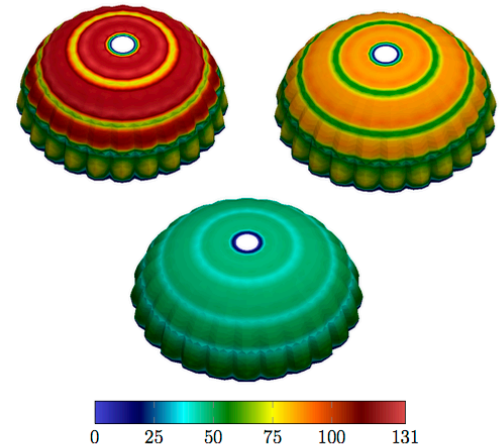
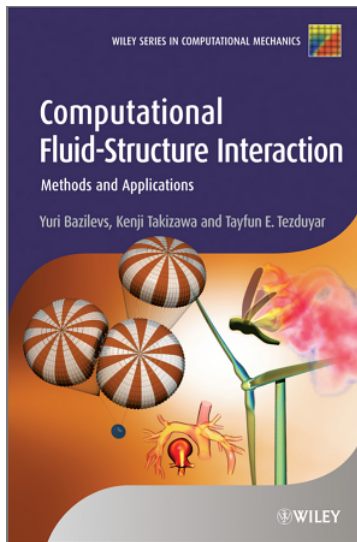


Fig. 4: Pressure difference (lb/ft^2) on the fluid interface of the drogue parachute for FC 3.1–3.3.

The right-most image is from: K. Takizawa, T.E. Tezduyar, R. Kolesar, C. Boswell, T. Kanai and K. Montel, “Multiscale methods for gore curvature calculations from FSI (Fluid-Structure Interaction) modeling of spacecraft parachutes”, *Computational Mechanics*, Vol. 54, pp 1461-1476, 2014

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<https://scholar.google.com/citations?user=5Yw2z0AAAAAJ&hl=en>

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Department of Mechanical Engineering
Rice University, Houston, Texas, USA

Also:

Department of Modern Mechanical Engineering
Waseda University, Shinjuku-ku, Japan

Biography:

Dr. Tezduyar received his Ph.D. from Caltech in 1982. After postdoctoral work at Stanford, he had faculty positions at University of Houston and University of Minnesota. At Minnesota he became a full professor in 1991 and was named Distinguished McKnight University Professor in 1997. He was the Director and Principal Investigator of the Army High Performance Computing Research Center from January 1994 to October 1998 and was widely recognized for leading the center to the level of excellence it reached during that period. He joined Rice University in 1998 as James F. Barbour Professor in Mechanical Engineering and Materials Science. He served as chairman of the department from January 1999 to June 2004.

Dr. Tezduyar holds a 1986 Presidential Young Investigator Award from the National Science Foundation. He received the 1997 Computational Mechanics Award of the Japan Society of Mechanical Engineers, 1997 Computational Fluid Dynamics Award of the US Association for Computational Mechanics, 1998 Computational Mechanics Award of the International Association for Computational Mechanics, 2012 International Scientific Career Prize of the Argentine Association for Computational Mechanics, 2013 Computational Mechanics Award of the Japan Association for Computational Mechanics, and 2018 ASME Ted

Belytschko Applied Mechanics Award. He was elected a Fellow of the American Society of Mechanical Engineers, US Association for Computational Mechanics, International Association for Computational Mechanics, American Academy of Mechanics, and the School of Engineering at University of Tokyo. He was named Web of Science Highly Cited Researcher in both the engineering and computer science categories in 2014, 2015, 2016 and 2017, and in the cross-field category in 2018. He was awarded an honorary doctorate from Slovak Republic. In recognition of research excellence in parachute modeling, Dr. Tezduyar and his research team received the Commander's Educational Award for Excellence from the US Army Soldier Systems Command. Dr. Tezduyar and his research team won in 2012 the First Place Prize of Rice University Centennial Ken Kennedy Institute Research Nugget Competition. He was inducted, as an Eminent Engineer, to Tau Beta Pi, The Engineering Honor Society, Colorado Zeta at US Air Force Academy. Dr. Tezduyar was awarded a visiting professorship at University of Tokyo, a visiting professorship and chair of international cooperation at Tokyo Institute of Technology, multiple visiting professorships at University of Rome, a visiting fellow appointment at Waseda Institute for Advanced Study, a professorship at University of Tokyo, a visiting professorship at Waseda University, and a joint professor appointment at Waseda University. Dr. Tezduyar coauthored a textbook titled *Computational Fluid-Structure Interaction: Methods and Applications*, published by Wiley, with the Japanese translation published by Morikita Publishing Company. He co-translated a book and edited 35 volumes. He published over 240 journal articles indexed by the Web of Science, over 20 other journal articles, over 55 book chapters, and over 170 invited conference papers. Dr. Tezduyar is an Editor of *Computational Mechanics* (Springer), *Modeling and Simulation in Science, Engineering and Technology* (Springer), and *Surveys in Mathematical Sciences* (European Mathematical Society), and an Associate Editor of *Mathematical Models and Methods in Applied Sciences* (World Scientific) and *Journal of Mechanics* (Cambridge University Press). He is a Series Advisor to *Computational Mechanics Series* of Wiley. He serves on the editorial boards of a number of journals. Dr. Tezduyar served as the Chair of the ASME Applied Mechanics Division in 2010-2011, as a member of the Executive Committee of the ASME Applied Mechanics Division in 2006-2011, as a member of the Executive Council of the International Association for Computational Mechanics in 2002-2014, and as a member of the European Research Council Advanced Grant Panel 2017.

Research Summary:

Dr. Tezduyar's areas of research expertise include computational fluid-structure interaction (FSI), cardiovascular FSI, heart valve computational flow analysis, spacecraft parachute FSI, bioinspired flapping-wing aerodynamics, aerodynamics of wind turbines, thermo-fluid analysis of ground vehicles, tires and disk brakes, flow analysis of turbochargers and other turbomachinery, and aerodynamics and structural mechanics of ram-air parachutes. His expertise also includes air circulation and contaminant dispersion, fluid-particle interaction, free-surface and two-fluid flows, moving boundaries and interfaces, computational fluid mechanics, finite element methods, stabilized formulations, multiscale methods, and parallel computing.

Selected Publications:

Book:

Yuri Bazilevs, Kenji Takizawa and Tayfun E. Tezduyar, *Computational Fluid-Structure Interaction: Methods and Applications*, John Wiley & Sons, 2013

Journal Articles, etc.:

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Johnson AA, Tezduyar TE (1997) 3D simulation of fluid-particle interactions with the number of particles reaching 100. *Comput Methods Appl Mech Eng* 145:301–321.

Tezduyar T, Kalro V, Garrard W (1997) Parallel computational methods for 3D simulation of a parafoil with prescribed shape changes. *Parallel Comput* 23:1349–1363.

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