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ANVAR GILMANOV
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EDUCATION:

- Doctor of Physical and Mathematical Sciences. The Institute of Applied Mathematics of the Russian Academy of Sciences (RAS), Moscow, 1996
- Ph.D., Computational Fluid Dynamics. The Institute of Theoretical and Applied Mechanics (RAS), Novosibirsk, 1982
- M.S., Physics. Moscow State University, Department of Physics, Moscow, 1973

PROFESSIONAL EXPERIENCE:

- Senior Engineer, Combustion Science & Engineering, Inc., Columbia, MD, 2020 – present
- Research Associate, University of Minnesota, U.S.A., 2011—2019
- Research Associate Professor, Louisiana State University, U.S.A., 2005—2011
- Research Scientist II, Georgia Institute of Technology, Atlanta, U.S.A., 2002-2005
- Senior Research Scientist, Institute of Mechanics and Engineering of Kazan Scientific Center of Russian Academy of Sciences (IME KSC RAS), Kazan, Russia, 1999-2002
- Professor of Department "Theory of Heat-and-Mass Transfer," Kazan Energy Power University, Kazan, Russia, 1996-1999
- Head of Laboratory of IME KSC RAS, Kazan, Russia. 1989-1996
- Senior, Research Scientist of IME KSC RAS, Kazan, Russia, 1981-1989
- Junior Research Scientist of IME KSC RAS, Kazan, Russia, 1975-1981

RESEARCH INTERESTS:

- Computational Fluid Dynamics in the area of turbulent combustion;
- Computational Solid Deformable Bodies/Thin Shells Mechanics;
- Fluid-Structure Interaction of thin shells with non-steady fluid/gas flow;
- High-Performance Computing.

PROFESSIONAL STANDING:

- Member of Russian National Committee of Theoretical and Applied Mechanics: http://www.ipmnet.ru/RNCTAM/staff/g/#GilmanovAN, (2001-present)

PUBLICATIONS:

Books and Part of Books

- Gilmanov, A., Stolarski, H., Sotiropoulos F. (2020). "Coupling the Curvilinear Immersed Boundary Method with Rotation-Free Finite Elements for Simulating Fluid–Structure

Interaction: Concepts and Applications", in Immersed Boundary Method. Development and Applications. Computational Methods in Engineering & the Sciences. Series Ed.: Bathe, Klaus-Jürgen. ISSN: 2662-4869. Springer, pp. 107-138.

- Ilgamov, M.A., Gilmanov, A.N. (2003), "Non-reflecting boundary conditions". Moscow: Nauka. Publishing Company Fizmatlit. 240P.
- Gilmanov, A.N. (2000), "Methods of Adaptive Meshes in Gas Dynamic Problems". Moscow: Nauka. Publishing Company Fizmatlit. 2000. 247P.

Journal Publications

- Gilmanov A., D. Zielinski, V. Voller, and P. Sorensen (2019), "The Effect of Modifying a CFD-AB Approach on Fish Passage through a Model Hydraulic Dam". Water, 11, 1776; doi:10.3390/w11091776
- Gilmanov A., A. Barker, H. Stolarski, and F. Sotiropoulos (2019), "Image-Guided Fluid-Structure Interaction Simulation of Transvalvular Hemodynamics: Quantifying the Effects of Varying Aortic Valve Leaflet Thickness". Fluids, 4, 119, doi:10.3390/fluids4030119
- Gilmanov A., H. Stolarski, and F. Sotiropoulos (2018), "Flow-structure interaction simulations of the aortic heart valve at physiologic conditions: The role of tissue constitutive model". Journal of Biomechanical Engineering. doi:10.1115/1.4038885.
- Gilmanov A., H. Stolarski, and F. Sotiropoulos (2017), "Non-linear rotation-free shell finite-element models for aortic heart valves". Journal of Biomechanics. 50: 56-62.
- Gilmanov, A., Le, T.B., Sotiropoulos F. (2015), "A numerical approach for simulating fluid structure interaction of flexible thin shells undergoing arbitrarily large deformations in complex domains". Journal of Computational Physics. V 300, 814-843.
- Gilmanov, A., Sotiropoulos, F. (2015), "Comparative hemodynamics in an aorta with bicuspid and trileaflet valves". Theoretical and Computational Fluid Dynamics. 1-19.
- Gilmanov, A., Acharya, S., Gilmanov, T. (2009), "Flow-Structure Interaction Simulations for Ballutes in Supersonic Flow". AIAA Paper 2906
- Gilmanov, A., Acharya, S. (2008), "A computational strategy for simulating heat transfer and flow past deformable objects". Int. Journal of Heat and Mass Transfer. V.51, P.4415-4426.
- Gilmanov, A., Acharya, S. (2008), "A hybrid Immersed Boundary & Material Point Method for Simulating 3D Fluid-Structure Interaction Problems". Int. Journal for Numerical Methods in Fluids. V.56, N12, P.2151-2177.
- Gilmanov, A., Sotiropoulos, F. (2005), "A hybrid Cartesian/immersed boundary method for simulating flows with 3D, geometrically complex, moving bodies". Journal of Computational Physics. V.207. P.457-492.