

Eli Livne holds B.Sc. (1974) and M.Sc. (1982) degrees in aeronautical engineering from the Technion, Israel Institute of Technology, and a Ph.D. (1990) in aerospace engineering from the University of California, Los Angeles. He also holds a high-school teaching credential in technology education from the Technion's Department of Education in Technology and Science (1974). After obtaining his undergraduate degrees he served in the Israeli Air Force in research and development roles, eventually founding its aeroelasticity / structural dynamic section. After graduating UCLA Prof. Livne joined the faculty of the Department of Aeronautics and Astronautics at the University of Washington in 1990. Over the course of his academic career, Prof. Livne has continued extensive collaboration with both industry and defense organizations. Highlights of these collaborations include structural and aeroelastic optimization and lightweight airframe design with Boeing Commercial Aircraft, membership on the NASA-Boeing High Speed Civil Transport (HSCT) Aeroelastic Concept Evaluation Team and the Boeing HSCT Aeroservoelastic working group, and contributions to industry / government wind tunnel aeroelastic tests of highly nonlinear flight vehicle configurations. Prof. Livne heads the airplane design education and research program at the University of Washington. His accomplishments have been recognized by an ASME/Boeing Structures & Materials Award (1998), NSF National Young Investigator Award, and earlier the Josephine de Karman Fellowship. With expertise in aeroelasticity, aeroservoelasticity, multidisciplinary flight vehicle optimization, aircraft design, aerospace structures, structural optimization, and structural dynamics, Professor Livne's research has been funded by NASA, the FAA, AFOSR, ONR, NSF, and by Boeing. He was an associate editor for the AIAA Journal and a guest editor for a Journal of Aircraft special section on MDO. He was one of the launch section editors for the Encyclopedia of Aerospace Engineering and has published about a hundred journal and conference papers. Currently, Prof. Livne is the Editor-in-Chief of the AIAA's (American Institute of Aeronautics and Astronautics) Journal of Aircraft.

Selected review articles and book chapters:

Livne, E., "Integrated Aeroservoelastic Optimization: Status and Progress", Journal of Aircraft, Vol. 36, No. 1, January-February 1999, pp. 122-145.

Livne, E., "Future of Airplane Aeroelasticity", Journal of Aircraft, Vol. 40, No. 6, November-December 2003, pp. 1066-1092.

Livne, E., and Weisshaar, T.A., "Aeroelasticity of Nonconventional Airplane Configurations – Past and Future", Journal of Aircraft, Vol. 40, No. 6, November-December 2003, pp. 1047-1065.

Livne, E., "The Evolution of Analytic and Computational Methods for Fixed-Wing Flight Vehicle Aeroelasticity", Volume 3, Chapter: 133:, in John Wiley's Encyclopedia of Aerospace Engineering (2010)

Mukhopadhyay, V., and Livne, E., "Aeroservoelasticity", Volume 3, Chapter 136, in John Wiley's Encyclopedia of Aerospace Engineering (2010)

Selected research articles:

Engelsen, F., and Livne, E., "Quadratic Stress Failure Constraints for Structures under Combined Steady and Random Excitation", AIAA Journal, Vol. 42, No. 1, January 2004, pp. 132-140.

Jackson, T., and Livne, E., "Integrated Aeroservoelastic Design Optimization of Actively-Controlled Strain-Actuated Flight Vehicles", Paper Number AIAA-2005-2170, 46th AIAA / ASME / ASCE / AHS / ASC Structures, Structural Dynamics, and Materials Conference, Austin, TX, April 2005.

Jackson, T., and Livne, E., "Design-Oriented Structural Model Order Reduction for Strain-Actuated Flight Vehicle Structures", AIAA Journal of Aircraft, Journal of Aircraft, vol.43, no.1, 2006, pp. 182-188.

Chen, P.C., Liu, D.D., and Livne, E., "Unsteady Aerodynamic Shape Sensitivities for Airplane Aeroservoelastic Configuration Optimization", Journal of Aircraft, vol.43, no.2, 2006, pp. 471-481.

Mor, M., and Livne, E., "Sensitivities and Approximations for Aeroservoelastic Shape Optimization with Gust Response Constraints", Journal of Aircraft, 2006, vol.43 no.5, pp. 1516-1527.

Mor, M., and Livne, E., "Shape Sensitivities Of Minimum-State Unsteady Aerodynamics Approximations using Sensitivity of Optimal Solutions to Problem Parameters", AIAA Journal, 2007, Vol. 45, No. 9, pp. 2187-2195.

Bhatia, M., and Livne, E., "Shape Sensitivities of Thermoelastic Structures with Internal and External Radiation, Part I – Steady State", AIAA Journal, 2008, Vol. 46, No. 3, pp. 578-590.

Demasi, L., and Livne, E., "Dynamic Aeroelasticity of Structurally Nonlinear Configurations Using Linear Modally Reduced Aerodynamic Generalized Forces", AIAA Journal, 2009, Vol. 47, No.1, pp. 70-90.

Demasi, L., and Livne, E., "Aeroelastic Coupling of Geometrically Nonlinear Structures and Linear Unsteady Aerodynamics: Two Formulations", Journal of Fluids and Structures, Volume 25, Issue 5, July 2009, Pages 918-935.

Bhatia, M., and Livne, E., "Design-Oriented Thermostructural Analysis with External & Internal Radiation. Part 2: Transient Response", AIAA Journal, 2009, vol. 47, May, No. 5, pp. 1228-1240.

Chen, P.C., Zhang, Z., and Livne, E., "ZEUS-DO: Design Oriented CFD-Based Unsteady Aerodynamics for Flight Vehicle Shape Optimization", AIAA-2010-2720, 51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Orlando, Florida, Apr. 12-15, 2010

Styuart, A., Livne, E., Demasi, L., and Mor, M., "Risk Assessment of Aeroelastic Failure Phenomena in Damage Tolerant Composite Structures", AIAA Journal, Vol. 49, No. 3, March 2011, pp. 655-669.