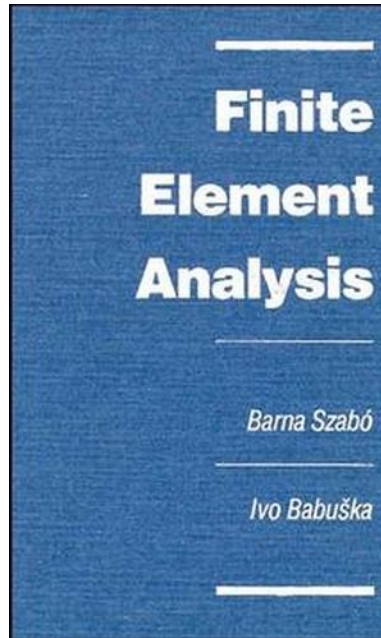


Professor Ivo M. Babuska



Barna Szabo and Ivo Babuska, Finite Element Analysis, Wiley, 1991, 384 pages

See:

<https://users.ices.utexas.edu/~babuska/>

https://en.wikipedia.org/wiki/Ivo_Babu%C5%A1ka

<http://www-history.mcs.st-andrews.ac.uk/Biographies/Babuska.html>

<https://scholar.google.com/citations?user=Ku3Fcb4AAAAJ&hl=en>

https://www.researchgate.net/scientific-contributions/73022285_Ivo_Babuska

Department of Aerospace Engineering and Engineering Mechanics
The University of Texas at Austin, USA

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University of Maryland, College Park, Maryland, USA

Biography:

Ivo M. Babuska earned his Ph.D. in civil engineering from the Technical University of Prague and his D.Sc in mathematics from the Czechoslovakia Academy of Sciences. He is professor of aerospace engineering and engineering mechanics, professor of mathematics, ICES senior research scientist, and a member of the ICES Multiscale Modeling Group. He holds the Robert B. Trull Chair in Engineering.

He is a member of the U.S. National Academy of Engineering, European Academy of Sciences, and Engineering Academy of the Czech Republic. Babuska is noted for his studies of the finite element method (FEM) and proof of the Babuska-Lax-Milgram theorem in partial differential equations. One celebrated result of FEM is the Babuska-Brezzi (BB) condition, which provides sufficient conditions for a stable mixed formulation. This has guided mathematicians and engineers to develop state-of-the-art formulations for technologically important problems like Darcy flow, Stokes flow, incompressible Navier-Stokes, and nearly

incompressible elasticity. He is also known for his work on adaptive methods and the p-, hp-versions of FEM. In addition, he developed the mathematical framework for the partition of unity methods.

Among his numerous awards and recognitions are five honorary doctorates, the Birkhoff Prize from the American Mathematical Society and the Society for Industrial and Applied Mathematics, the Congress Medal from the International Association on Computational Mechanics, the John von Neumann Medal from the U.S. Association for Computational Mechanics, and the Bolzano Medal from the Czech Academy of Sciences. Ivo Babuska has published more than 320 papers in refereed journals, more than 80 papers in conference proceedings, and eight books. He is an invited speaker at major international conferences and is a member numerous editorial boards for scientific journals. For his work he received many honors, among others four doctorate honours causa, the Czechoslovakia State prize for Mathematics, the Birkhoff prize, the John von Neuman Medal, the Bolzano Medal, and the Leroy P. Steele Prize for Lifetime Achievement, American Mathematical Society.

Research Interests:

Theory of partial differential equations; Numerical methods for solving PDS; Finite element methods; Bayesian methods for VV and UQ; Computational mechanics

Selected Publications:

Books:

Babuška, I., Zienkiewicz, O.C., Gago, J.P.de S.R. and de Arantes Oliveira, E.R. (1986), "Accuracy Estimates and Adaptive Refinement in Finite Element", J. Wiley & Sons.

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I. Babuska and T. Strouboulis, The Finite Element Method and Its Reliability, Numerical Mathematics and Scientific Computation, Clarendon Press, New York, 2001

Journal Articles, etc.:

I. Babuška, "Error-bounds for finite element method", Numer. Math. 16:4 (1971), 322–333.

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Babuska I, Suri M (1992) Locking effects in the finite element approximation. *Numer Math* 62:439–463

Babuska, I., Szabo, B.A. and Actis, R.L. (1992), “Hierarchy models for laminated composites”, *International Journal for Numerical Methods in Engineering*, 33, 503–535.

Babuška I, Caloz G, Osborn J. Special finite element methods for a class of second order elliptic problems with rough coefficients. *SIAM Journal on Numerical Analysis*, 1994, 31(4): 945–981

I. Babuska, T. Strouboulis, C. S. Upadhyay, S. K. Gangaraj, and K. Copps. Validation of a posteriori error estimators by numerical approach. *International Journal for Numerical Methods in Engineering*, 37:1073–1123, 1994.

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