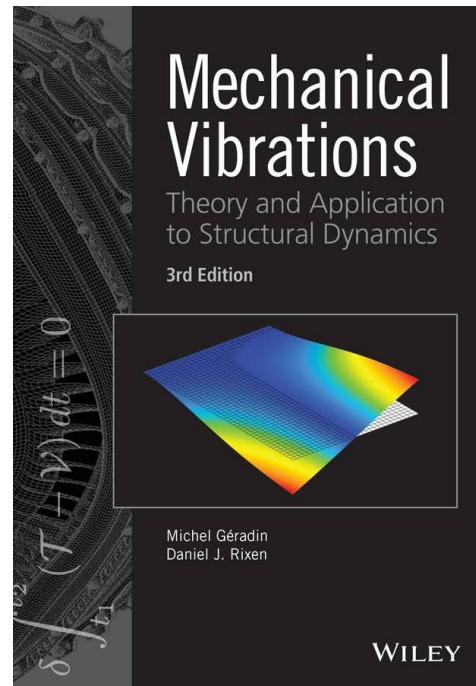




Professor Michel Gérardin



Gérardin M., Rixen D. Mechanical Vibrations - Theory and Application to Structural Dynamics. John Wiley & Sons, Third edition, 2014.

See:

<http://www.ltas-vis.ulg.ac.be/cmsms/index.php?page=90>

<http://www.tum-ias.de/people/members/alexander-von-humboldt-awardees/prof-michel-geradin.html>

Aerospace Laboratory (LTAS), Structural Dynamics Research Group
University of Liège, Belgium

Biography:

Born in 1945 in Rocourt (Belgium), has obtained an Engineering Degree in Physics from ULG (University of Liège, Belgium) in 1967. Has been a research fellow the Belgian National Research Science Foundation (FNRS) from 1968 to 1979 and has obtained during that period a PhD with a thesis on Structural Dynamics. He visited for one year (1973-1974) the Dpt of Aeronautics and Astronautics of Stanford University (CA, USA) as Visiting Scholar and was also detached for one year (1974-1975) as Structural Analyst at the SEP company (Vernon, France) in the context of the beginning Ariane project. Nominated Professor at ULG in 1979 (full Professor in 1987), he has developed in the context of the Aerospace Laboratory (LTAS) of ULG a research group in Structural Dynamics, with internationally renown competence in finite element methodology, computational methods in structural dynamics, numerical analysis, kinematics and dynamics of flexible multibody systems, experimental vibrations, aeroelasticity, analysis and identification of rotating machinery, dynamic model updating, parallel processing in structural mechanics. He has been awarded several scientific prizes. He is Doctor Honoris Causa from the Technical University of Lisbon, Portugal (1996) and from Ecole Centrale de Nantes, France (2007). In 2000 he has been nominated corresponding member of the Royal Academy of Sciences of Belgium.

He is one of the authors of the finite element software SAMCEF and has participated actively to the creation in 1986 of the Samtech company which has now become a European leader in finite element software for

structural mechanics. Together with his research team and with the Samtech team he has been a consultant to many companies and organizations in Europe (such as Aérospatiale, SNECMA, ESTEC), mainly in the aerospace field. He has been Visiting Professor to the University of Colorado (Boulder, Co, USA) in 1986-1987. He is the author of about 130 international papers and of two widely diffused books: one on Mechanical Vibrations published twice jointly by J. Wiley (in English) and Masson (in French), and one on Flexible Multibody Dynamics, published also by J. Wiley in 2000. He is a member of the editorial board of several important journals in Computational Mechanics.

He joined the Joint Research Center at Ispra, Italy in October 1997 as Unit Head of the European Laboratory for Structural Assessment (ELSA) at the Institute for the Security and protection of the Citizen (IPSC). He assumes the management and the scientific leadership of a group of 30 permanent staff working on Structural mechanics with focus on aspects relevant to the protection of the citizen: earthquake engineering and seismic risk mitigation, standardization for construction, vulnerability assessment of buildings and infrastructures under natural and man-made hazards, vulnerability of critical infrastructures under severe loads due to terrorist attacks. He still keeps links with his former institution (ULG) where he remains “Professeur Extraordinaire” in the area of Structural Dynamics.

Selected Publications:

Books:

Géradin M., Fraeijs de Veubeke, B., Huck, A. Structural Dynamics. Number 126 in CISM Courses and Lectures. Springer Verlag, 1974.

M. Gérardin, editor. Memorial volume of B.M. Fraeijis de Veubeke’s selected papers. Solid Mechanics Archives. Sijthoff & Noordhoff, 1980.

Géradin M., Friberg O. Computer Methods in Flexible Multibody Dynamics, volume 32(8) of International Journal of Numerical Methods in Engineering. John Wiley & Sons, 1991. (special issue).

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Journal Articles:

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5. Gérardin M. Eigenvalue analysis by matrix iteration in the presence of kinematical modes. *Shock and Vibration Digest*, 6(3), March 1974.
6. Gérardin M., Bon C. On the numerical solution of large eigenvalue problems arising in panel flutter analysis by the finite element method. *Computers and Structures*, 4(6):1223–1250, December 1974.
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11. Gérardin M. On the Lanczos method for solving large structural eigenvalue problems. *ZAMM*, 59:T127–T129, 1979.
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13. Gérardin M. Nonlinear structural dynamics via Newton and quasi-Newton methods. *Nuclear Engineering and Design*, 58:339–348, 1980.
14. Gérardin M., Idelsohn S. On the self-stressing modes in free vibration analysis. *Journal of Sound and Vibration*, 83(2):143–155, 1982.
15. Gérardin M., Hogge M., Laschet, G. Finite element modelling of uncoupled thermoelastic/viscoplastic material behavior. *Latin American Journal of Heat and Mass Transfer*, 7(1):15–33, 1983.
16. Gérardin M., Kill N. A new approach to finite element modelling of flexible rotors. *Engineering Computations*, 1(1):52–64, March 1984.
17. Gérardin M., Robert G., Huck A. Eigenvalue analysis and transient response of fluid structure interaction problems. *Engineering Computations*, 1(2):151–160, June 1984.
18. Gérardin M., Braibant, V. Optimum path planning of robot arms. *Robotica*, 5, 1987.
19. Cardona A. and Gérardin M. A beam finite element nonlinear theory with finite rotations. *Int. Jnl. Num. Meth. Engng.*, 26:2403–2438, 1988.
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