



## **Professor Emeritus Roger Ohayon**

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### **Le CNAM**

Laboratoire de mécanique des structures et des systèmes couplés (lmssc)

**Career:** 1970-1992: ONERA, Division Head, Structural Mechanics and Coupled Systems, Scientific Deputy at the Structure Directorate. 1992-...: Professor at Conservatoire National des Arts et Metiers (CNAM), Chair of Mechanics/Structural Mechanics and Coupled Systems Lab. Consultant at ONERA. Expertise: Computational Mechanics. Structural Dynamics and Vibrations. Fluid-Structure Interaction. Structural-Acoustics. Intelligent Adaptive Structures and Systems.

**Medals & distinctions:** o Palmes Acad. France+ Brazil Nat. Acad. Eng. Mem. + AIAA Fellow + AAAF,IACM,ASME Fellow + France Acad. Sciences, EASD,ECCOMAS,IACM,ASME Awards.

**Works & publications:** 120 papers in Int. J. Mem. - Edit. Board 12 Int. J. (assoc. ed. JIMSS, AIAA J.). Co-author of one book in French and two books in English on Fluid-Structure Interaction (Wiley ed.) and Structural Acoustic and Vibrations (Acad.Press). Mem. of Org. Committees of Int.Comp.Mech.Confs and Smart Structures.

**Recent Publications:**

W. Larbi, J.-F. Deü, R. Ohayon, Finite element formulation of smart piezoelectric composite plates coupled with acoustic fluid, *Composite Structures*, 94 (2), 501-509, 2012.

T. Miras, J.-S. Schotté, R. Ohayon, Liquid sloshing damping in an elastic container, *Journal of Applied Mechanics*, 79 (1), 010902, 2012.

M. El-Kamali, J.-S. Schotté, R. Ohayon, Three-dimensional modal analysis of sloshing under surface tension, *International Journal for Numerical Methods in Fluids*, 65 (1-3), 87-105, 2011.

A. Placzek, D.-M. Tran, R. Ohayon, A nonlinear POD-Galerkin reduced-order model for compressible flows taking into account rigid body motions, *Computer Methods in Applied Mechanics and Engineering*, 200 (49-52), 3497-3514, 2011.

M. El-Kamali, J.-S. Schotté, R. Ohayon, Computation of the equilibrium position of a liquid with surface tension inside a tank of complex geometry and extension to sloshing dynamic cases, *Computational Mechanics*, 46 (1), 169-184, 2010.

W. Larbi, J.-F. Deü, M. Ciminello, R. Ohayon, Structural-acoustic vibration reduction using switched shunt piezoelectric patches: A finite element analysis, *Journal of Vibration and Acoustics*, 132 (5), 051006, 2010.

K.C. Park, R. Ohayon, C.A. Felippa, J.A. González, Partitioned formulation of internal and gravity waves interacting with flexible structures, *Computer Methods in Applied Mechanics and Engineering*, 199 (9-12), 723-733, 2010.

K.C. Park, C.A. Felippa, R. Ohayon, The d'Alembert-Lagrange principal equations and applications to floating flexible systems, *International Journal for Numerical Methods in Engineering*, 77 (8), 1072-1099, 2009.

J.-S. Schotté, R. Ohayon, Various modelling levels to represent internal liquid behaviour in the vibration analysis of complex structures, *Computer Methods in Applied Mechanics and Engineering*, 198 (21-26), 1913-1925, 2009.

S. Carra, M. Amabili, R. Ohayon, P.M. Hutin, Active vibration control of a thin rectangular plate in air or in contact with water in presence of tonal primary disturbance, *Aerospace Science and Technology*, 12 (1), 54-61, 2008.

J.-F. Deü, W. Larbi, R. Ohayon, Piezoelectric structural acoustic problems: Symmetric variational formulations and finite element results, *Computer Methods in Applied Mechanics and Engineering*, 197 (19-20), 1715-1724, 2008.

- J.-F. Deü, W. Larbi, R. Ohayon, Vibration and transient response of structural acoustic interior coupled systems with dissipative interface, *Computer Methods in Applied Mechanics and Engineering*, 197 (51-52), 4894-4905, 2008.
- J.-F. Deü, A.C. Galucio, R. Ohayon, Dynamic responses of flexible-link mechanisms with passive/active damping treatment, *Computers & Structures*, 86 (3-5), 258-265, 2008.
- A. Placzek, D.-M. Tran, R. Ohayon, Hybrid proper orthogonal decomposition formulation for linear structural dynamics, *Journal of Sound and Vibration*, 318 (4-5), 943-964, 2008.
- C. Soize, E. Capiez-Lernout, R. Ohayon, Robust updating of uncertain computational models using experimental modal analysis, *AIAA Journal*, 46 (11), 2955-2965, 2008.
- S. Carra, M. Amabili, R. Ohayon, Broadband active vibration control of a rectangular flexible wall of an empty and a water-filled tank, *Journal of Intelligent Material Systems and Structures*, 18 (7), 637-651, 2007.
- A.C. Galucio, J.-F. Deü, R. Ohayon, Hybrid active-passive damping treatment of sandwich beams in non-linear dynamics, *Journal of Vibration and Control*, 13 (7), 851-881, 2007.
- W. Larbi, J.-F. Deü, R. Ohayon, Vibration of axisymmetric composite piezoelectric shells coupled with internal fluid, *International Journal for Numerical Methods in Engineering*, 71 (12), 1412 -1435, 2007.
- O. Andrianarison, R. Ohayon, Compressibility and gravity effects in internal fluid–structure vibrations: Basic equations and appropriate variational formulations, *Computer Methods in Applied Mechanics and Engineering*, 195 (17-18), 1958-1972, 2006.
- O. Andrianarison, R. Ohayon, Reduced models for modal analysis of fluid-structure systems taking into account compressibility and gravity effects, *Computer Methods in Applied Mechanics and Engineering*, 195 (41-43), 5656-5672, 2006.
- W. Larbi, J.-F. Deü, R. Ohayon, A new finite element formulation for internal acoustic problems with dissipative walls, *International Journal for Numerical Methods in Engineering*, 68 (3), 381-399, 2006.
- A.C. Galucio, J.-F. Deü, R. Ohayon, A fractional derivative viscoelastic model for hybrid active–passive damping treatments in time domain – Application to sandwich beams, *Journal of Intelligent Material Systems and Structures*, 16 (1), 33-45, 2005.
- P. Jean, R. Ohayon, D. Le Bihan, Payload/launcher vibration isolation: MR dampers modeling with fluid compressibility and inertia effects through continuity and momentum equations, *International Journal of Modern Physics B*, 19 (7-9), 1534-1541, 2005.
- J.-S. Schotté, R. Ohayon, Incompressible hydroelastic vibrations: Finite element modelling of the elastogravity operator, *Computers & Structures*, 83 (2-3), 209-219, 2005.
- A.C. Galucio, J.-F. Deü, R. Ohayon, Finite element formulation of viscoelastic sandwich beams using fractional derivative operators, *Computational Mechanics*, 33 (4), 282-291, 2004.

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A. Benjeddou, M.A. Trindade, R. Ohayon, Piezoelectric actuation mechanisms for intelligent sandwich structures, *Smart Materials and Structures*, 9 (3), 328-335, 2000.

M.A. Trindade, A. Benjeddou, R. Ohayon, Modeling of frequency-dependent viscoelastic materials for active-passive vibration damping, *Journal of Vibration and Acoustics*, 122 (2), 169-174, 2000.