



Professor Olivier Thomas

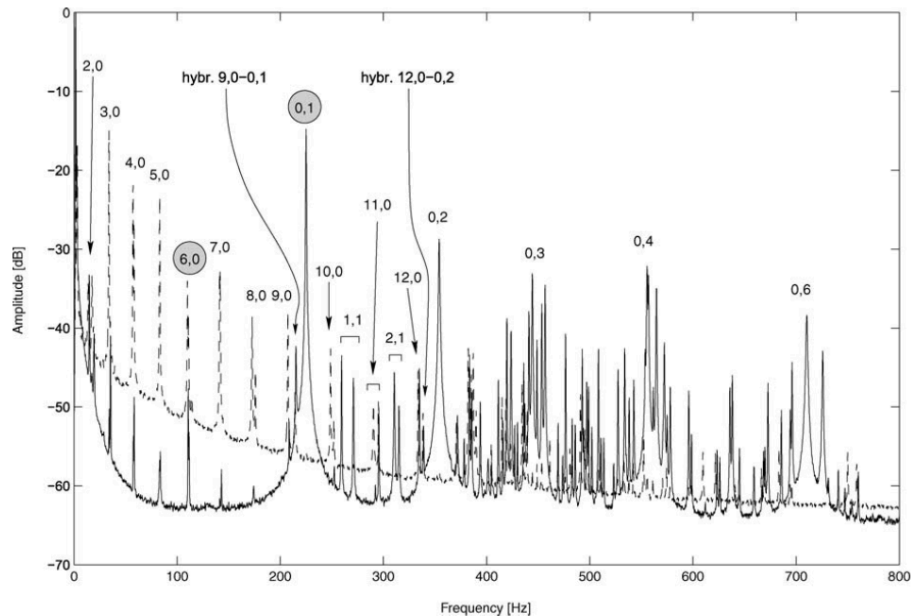


Fig. 5 Frequency response of the shell. (—) Center excitation. (- -) Rim excitation

From: O. Thomas, C. Touzé, and É. Luminais. Non-linear vibrations of free-edge thin spherical shells : experiments on a 1:1:2 internal resonance. *Nonlinear Dynamics*, 49(1-2) :259–284, 2007

See:

- <http://www.lsis.org/thomaso/indexEN.html>
- <http://www.lsis.org/thomaso/publicationsEN.html>

Numerical Engineering of Mechanical Systems
 Laboratoire des Sciences de l'Information et des Systèmes (LSIS), Lille, France

Research Interests:

Vibrations, nonlinear dynamics, coupled and smart systems & structures

Selected Publications:

- S. Bilbao, O. Thomas, C. Touzé, and M. Ducceschi. Conservative numerical methods for the full von Kármán plate equations. *Numerical Methods for Partial Differential Equations*, March 2015
- S. Neukirch, A. Goriely, and O. Thomas. Singular inextensible limit in the vibrations of post-buckled rods : Analytical derivation and role of boundary conditions. *Journal of Sound and Vibration*, 333(3) :962–970, 2014
- M. Monteil, C. Touzé, O. Thomas, and S. Benacchio. Nonlinear forced vibrations of thin structures with tuned eigenfrequencies : the cases of 1:2:4 and 1:2:2 internal resonances. *Nonlinear Dynamics*, 75(1-2) :175–200, 2014
- A. Lazarus, O. Thomas, and J.-F. Deü. Finite elements reduced order models for nonlinear vibrations of piezoelectric layered beams with applications to NEMS. *Finite Elements in Analysis and Design*, 49(1) :35–51, 2012
- C. Touzé, O. Thomas, and M. Amabili. Transition to chaotic vibrations for harmonically forced perfect and imperfect circular plates. *International Journal of Non-linear Mechanics*, 46(1) :234–246, 2011
- A. Lazarus and O. Thomas. A harmonic-based method for computing the stability of periodic solutions of dynamical systems. *Comptes Rendus Mécanique*, 338(9) :510–517, 2010

O. Thomas, L. Nicu, and C. Touzé. Flambage et vibrations non-linéaires d'une plaque stratifiée piézoélectrique. Application à un capteur de masse MEMS. *Mécanique & Industries*, 10 :311–316, 2009

C. Camier, C. Touzé, and O. Thomas. Non-linear vibrations of imperfect free-edge circular plates and shells. *European Journal of Mechanics A/Solids*, 28(3) :500–515, 2009

C. Touzé, C. Camier, G. Favraud, and O. Thomas. Effect of imperfections and damping on the type of nonlinearity of circular plates and shallow spherical shells. *Mathematical Problems in Engineering*, 2008 :ID 678307, 2008

C. Touzé, M. Amabili, and O. Thomas. Reduced-order models for large-amplitude vibrations of shells including in-plane inertia. *Computer Methods in Applied Mechanics and Engineering*, 197(21-24) :2030–2045, 2008

O. Thomas and S. Bilbao. Geometrically non-linear flexural vibrations of plates : in-plane boundary conditions and some symmetry properties. *Journal of Sound and Vibration*, 315(3) :569–590, 2008

O. Thomas, C. Touzé, and É. Luminais. Non-linear vibrations of free-edge thin spherical shells : experiments on a 1:1:2 internal resonance. *Nonlinear Dynamics*, 49(1-2) :259–284, 2007

C. Touzé and O. Thomas. Non-linear behaviour of free-edge shallow spherical shells : effect of the geometry. *International Journal of non-linear Mechanics*, 41(5) :678–692, 2006

O. Thomas, C. Touzé, and A. Chaigne. Non-linear vibrations of free-edge thin spherical shells : modal interaction rules and 1:1:2 internal resonance. *International Journal of Solids and Structures*, 42(11-12) :3339–3373, 2005

A. Chaigne, C. Touzé, and O. Thomas. Nonlinear vibrations and chaos in gongs and cymbals. *Acoustical Science and Technology*, 26(5) :403–409, 2005

C. Touzé, O. Thomas, and A. Huberdeau. Asymptotic non-linear normal modes for large amplitude vibrations of continuous structures. *Computers and Structures*, 82(31-32) :2671–2682, 2004

C. Touzé, O. Thomas, and A. Chaigne. Hardening/softening behaviour in non-linear oscillations of structural systems using non-linear normal modes. *Journal of Sound and Vibration*, 273(1-2) :77–101, 2004

O. Thomas, C. Touzé, and A. Chaigne. Asymmetric non-linear forced vibrations of free-edge circular plates, part 2 : experiments. *Journal of Sound and Vibration*, 265(5) :1075–1101, 2003

C. Touzé, O. Thomas, and A. Chaigne. Asymmetric non-linear forced vibrations of free-edge circular plates, part 1 : theory. *Journal of Sound and Vibration*, 258(4) :649–676, 2002