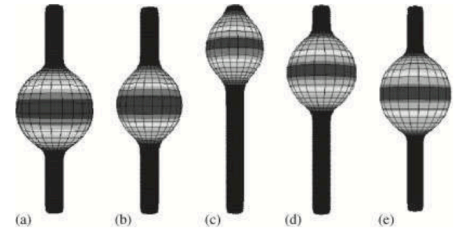
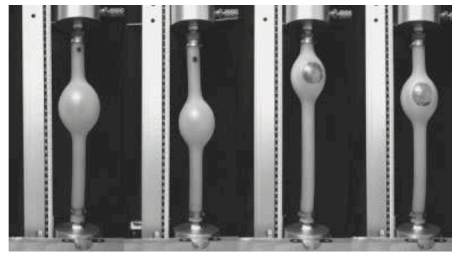


Figure 1. Cerebral aneurysms (Barrow Neurological Institute Web site).



Images are from: S.R.X. Lopes, P.B. Gonçalves and D.C. Pamplona, "Influence of initial geometric imperfections on the stability of thick cylindrical shells under internal pressure", *Communications in Numerical Methods in Engineering*, Vol. 23, pp 577-597, 2007

Professor Paulo B. Gonçalves

See:

https://www.researchgate.net/profile/Paulo_Goncalves5

Civil Engineering Department, Catholic University, PUC-Rio, 22451-900—Rio de Janeiro, RJ, Brazil

Selected Publications:

- P.B. Gonçalves and R.C. Batista, "Non-linear vibration analysis of fluid-filled cylindrical shells", *Journal of Sound and Vibration*, Vol. 127, No.1, November 1988, pp. 133-143, doi:10.1016/0022-460X(88)90354-9
- Paulo B. Gonçalves and Zenón J.G.N. Del Prado, "Nonlinear Oscillations and Stability of Parametrically Excited Cylindrical Shells", *Meccanica*, Vol. 37, No. 6, 2002, pp. 569-597, doi: 10.1023/A:1020972109600
- P.B. Gonçalves and Z.G. del Prado, "Effect of non-linear modal interaction on the dynamic instability of axially excited cylindrical shells", *Computers & Structures*, Vol. 82, Nos. 31-32, December 2004, pp. 2621-2634, Special Issue: Nonlinear Dynamics of Continuous Systems, doi:10.1016/j.compstruc.2004.04.020
- Paulo Gonçalves and Zenón del Prado (Civil Engineering Department, Catholic University, PUC-Rio, 22453-900, Rio de Janeiro, Brazil), "The Non-Linear Dynamics of Thin Walled Shell Structures", *IUTAM Symposium on Chaotic Dynamics and Control of Systems and Processes in Mechanics, Solid Mechanics and Its Applications*, 2005, Vol. 122, No. III., pp. 213-222, doi: 10.1007/1-4020-3268-4_20
- Paulo B. Gonçalves and Zenón J. G. N. Del Prado, "Low-Dimensional Galerkin Models for Nonlinear Vibration and Instability Analysis of Cylindrical Shells", *Nonlinear Dynamics*, Vol. 41, Nos. 1-3, 2005, pp. 129-145, doi: 10.1007/s11071-005-2802-3
- Paulo B. Goncalves, Frederico M.A. da Silva and Zenon J.G.N. del Prado, "Transient Stability of Empty and Fluid-Filled Cylindrical Shells", *Journal of the Brazilian Society of Mechanical Science & Engineering*, Vol. 28, No. 3, July-September 2006
- Paulo B. Gonçalves, Frederico M.A. Silva and Zenón J.G.N. del Prado, "Transient and steady state stability of cylindrical shells under harmonic axial loads", *International Journal of Non-Linear Mechanics*, Vol. 42, No. 1, January 2007, pp. 58-70, Special Issue: Nonlinear Dynamic Stability of Nonconservative Dissipative Systems, doi:10.1016/j.ijnonlinmec.2006.12.011
- Gonçalves, P. B., Silva, F. M. and Del Prado, Z. J. G. N., 2007a, "Global stability analysis of parametrically excited cylindrical shells through the evolution of basin boundaries", *Nonlinear Dynamics*, Vol. 50, pp 121-145, 2007
- S.R.X. Lopes, P.B. Gonçalves and D.C. Pamplona (Civil Engineering Department, Pontifical Catholic

University, PUC-Rio 22453-900, Rio de Janeiro, Brazil), "Influence of initial geometric imperfections on the stability of thick cylindrical shells under internal pressure", *Communications in Numerical Methods in Engineering*, Vol. 23, pp 577-597, 2007

P.B. Gonçalves, D. Pamplona and S.R.X. Lopes, "Finite deformations of an initially stressed cylindrical shell under internal pressure", *International Journal of Mechanical Sciences*, Vol. 50, No. 1, January 2008, pp. 92-103, doi:10.1016/j.ijmecsci.2007.05.001

Paulo B. Gonçalves and Donald Mark Santee, "Influence of Uncertainties on the Dynamic Buckling Loads of Structures Liable to Asymmetric Postbuckling Behavior", *Mathematical Problems in Engineering* Volume 2008, Article ID 490137, 24 pages doi:10.1155/2008/490137

P.B. Gonçalves, F.M.A. Silva and Z.J.G.N. Del Prado, "Low-dimensional models for the nonlinear vibration analysis of cylindrical shells based on a perturbation procedure and proper orthogonal decomposition", *Journal of Sound and Vibration*, Vol. 315, No. 3, 19 August 2008, pp. 641-663, Special Issue: EUROMECH colloquium 483, Geometrically non-linear vibrations of structures, doi:10.1016/j.jsv.2008.01.063

Zenon del Prado, Paulo B. Goncalves and Michael P. Paidoussis, "Dynamic instability of imperfect orthotropic cylindrical shells with internal flowing fluid", 7th EUROMECH Solid Mechanics Conference, J. Ambrosio et al. (editors), Lisbon, Portugal, September 7-11, 2009

Z. del Prado, P.B. Gonçalves and M.P. Païdoussis, "Nonlinear vibrations and imperfection sensitivity of a cylindrical shell containing axial fluid flow", *Journal of Sound and Vibration*, Vol. 327, Nos. 1-2, October 2009, pp. 211-230, doi:10.1016/j.jsv.2009.06.016

Zenon N. del Prado and Paulo B. Gonçalves, "Influence of Geometry on the Dynamic Buckling and Bifurcations of Cylindrical Shells", *SDSS'Rio 2010 Stability and Ductility of Steel Structures* E. Batista, P. Vellasco, L. de Lima (Eds.) Rio de Janeiro, Brazil, September 8 - 10, 2010

Zenon del Prado, Paulo B. Gonçalves and Michael P. Païdoussis, "Non-linear vibrations and instabilities of orthotropic cylindrical shells with internal flowing fluid", *International Journal of Mechanical Sciences*, Vol. 52, No. 11, November 2010, pp. 1437-1457, Special Issue on Non-linear Oscillations, doi:10.1016/j.ijmecsci.2010.03.016

Gonçalves, P.B., Silva, F.M.A., Rega, G. and Lenci, S., 2011, "Global dynamics and integrity of a two-dof model of a parametrically excited cylindrical shell", *Nonlinear Dynamics*, Vol. 63, pp. 61-82.

Frederico M. A. Silva, Paulo B. Gonçalves and Zenón J. G. N. del Prado, "An alternative procedure for the non-linear vibration analysis of fluid-filled cylindrical shells", *Nonlinear Dynamics*, Vol. 66, pp 303-333, 2011

F.M.A. Silva, P.B. Goncalves and Z.J.G.N. del Prado, "Parametric instability and snap-through of partially fluid-filled cylindrical shells", *Procedia Engineering*, Vol. 14, pp 598-605, 2011

Frederico M. A. Silva; Paulo B. Gonçalves; Zenón J. G. N. Del Prado, "Influence of physical and geometrical system parameters uncertainties on the nonlinear oscillations of cylindrical shells", *J. Braz. Soc. Mech. Sci. & Eng.* vol.34 no.spe2 Rio de Janeiro 2012

Frederico M.A. Silva, Lara Rodrigues, Paulo B. Goncalves and Zenon J.G.N. Prado, "Nonlinear vibrations of a axially excited circular cylindrical shell considering the effects of modal coupling", 11th International Conference on Vibration Problems, Z. Dimitrovova et al. (editors), Lisbon, Portugal, 9-12 September 2013

Silva, F. M. A., Goncalves, P. B. and Prado, Z. J. G. N. Del, "The influence of internal resonances on the dynamics of fluid-filled cylindrical shells", 10th World Congress on Computational Mechanics, Vol. 1, No. 1, May 2014, Blucher Mechanical Engineering Proceedings.

Frederico Martins Alves da Silva, Roger Otavio Pires Montes, Paulo Batista Goncalves and Zenon Jose Guzman Nunez Del Prado, "Nonlinear vibrations of fluid-filled functionally graded cylindrical shell considering a time-dependent lateral load and static preload", *Proceedings of the Institution of Mechanical Engineers Part C Journal of Mechanical Engineering Science*, Vols. 203-210, May 2015

Frederico Martins Alves da Silva, Augusta Finotti Brazao and Paulo Batista Goncalves, "Influence of physical

and geometrical uncertainties in the parametric instability load of an axially excited cylindrical shell”, *Mathematical Problems in Engineering*, Vol. 2015, Article ID 758959, 2015

Frederico M.A. Silva and Paulo B. Goncalves, “The influence of uncertainties and random noise on the dynamic integrity analysis of a system liable to unstable buckling”, *Nonlinear Dynamics*, July 2015, DOI: 10.1007/s11071-015-2021-5

Zenon J.G.N. del Prado, Marco Amabili, Paulo B. Goncalves and Frederico Da Silva, “Geometry effects on the nonlinear oscillations of viscoelastic cylindrical shells”, *ECCOMAS Congress 2016, VII European Congress on Computational Methods in Applied Sciences and Engineering*, M. Papadrakakis, V. Papadopoulos, G. Stefanou and V. Plevris (editors), Crete Island, Greece, June 5-10 2016

Paulo B. Gonçaves, Frederico M. A. Silva, Zenón J. G. N. Del Prado, “Reduced order models for the nonlinear dynamic analysis of shells”, *IUTAM Symposium Analytical Methods in Nonlinear Dynamics*, *Procedia IUTAM 19*, pp 118-125, 2016

Zenon J.G.N. del Prado, Marco Amabili and Paulo B. Goncalves, “Non linear vibrations of imperfect fluid-filled viscoelastic cylindrical shells”, *Procedia Engineering*, Vol. 199, pp 570-576, 2017

Lara Rodrigues, Paulo B. Goncalves and Frederico M.A. Silva, “Internal resonances in a transversally excited imperfect circular cylindrical shell”, *Procedia Engineering*, Vol. 199, pp 838-843, 2017