



Professor Angelo Luongo

See:

- http://www.ing.univaq.it/personale/scheda_personale.php?codice=199
- http://www.researchgate.net/profile/Angelo_Luongo
- http://www.mathmods.eu/my/userprofile/angelo_luongo

Solid and Structural Mechanics
 Department of Civil Engineering
 Università degli Studi dell'Aquila

Partial Professional Experience (see the first website listed above for more):

- 1978 degree in Civil Engineering at “La Sapienza” University (Rome)
- 1978-1981 Fellowship of the Italian National Research Council, CNR
- 1981-1988 Assistant Professor at “La Sapienza” University
- 1988-1990 Associate Professor at L'Aquila University
- 1990-date Full Professor at L'Aquila University

Angelo Luongo mainly works on Dynamics and Stability of Elastic Structures, with particular interest to geometrically nonlinear systems.

Overview of Publications:

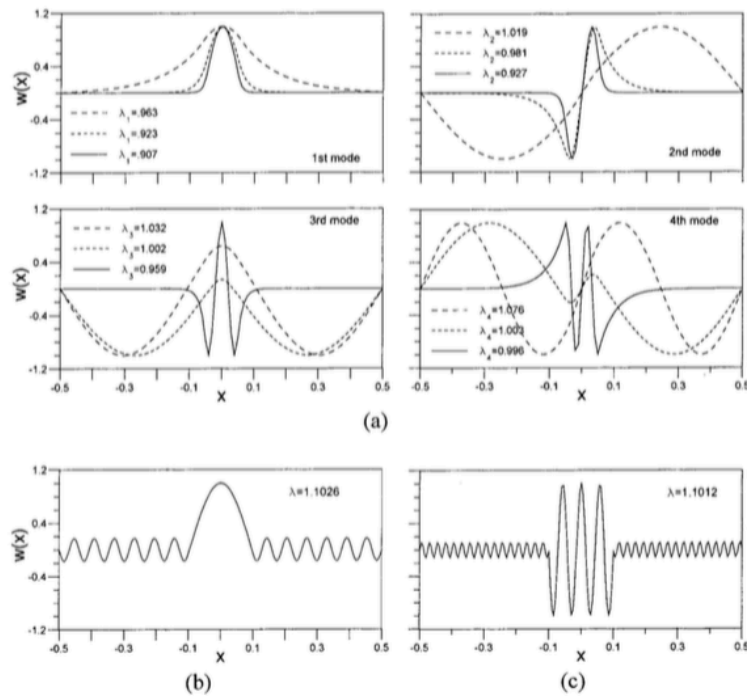


Figure 1. Normal modes for the string on elastic soil with rectangular stiffness well (a) or peak (b) centered at midspan; (a) $\varepsilon = 0.1$, $\Delta = 0.05$, --- $\beta = 0.02236$, ... $\beta = 0.00707$, — $\beta = 0.00316$; (b) $\varepsilon = -0.1$, $\Delta = 0.1$, $\beta = 0.00316$; (c) $\varepsilon = -0.1$, $\Delta = 0.1$, $\beta = 3.16 \times 10^{-4}$.

From: Angelo Luongo, “Mode localization in dynamics and buckling of linear imperfect continuous structures”, Chapter in Normal Modes and Localization in Nonlinear Systems, edited by A. F. Vakakis, Springer, 2001, pp 133-156

Author of about 150 scientific papers, most of which are published in international journals in the following areas:

Linear free oscillations of elastic suspended cables
Nonlinear oscillations of one dimensional, elastic, structural systems (wires, beams);
Critical and post-critical behaviour of thin-walled beams;
Nonlinear interaction among nearly-simultaneous buckling modes;
Nonlinear dynamics of wires orbiting systems;
Localization phenomena in Dynamics and Buckling;
Sensitivity analysis of defective and nearly-defective dynamical systems;
Aero-elastic stability phenomena in linear and nonlinear systems;
Passive control of aero-elastic oscillations by Tuned Mass Dampers and Nonlinear Energy Sinks;
Perturbation methods for multiple-bifurcations analysis of multi-parameter systems;
Dynamics and buckling of linear and nonlinear spatially-periodic systems;
Dynamics of strings and beams with travelling masses;
Piezo-electro-mechanical systems for passive control and energy harvesting.

Co-author of six educational and scientific books on Continuum Mechanics, Structural Mechanics and Elastic Stability

Selected Publications:

Pignataro, M., A. Luongo and N. Rizzi. 1985. "On the Effect of the Local Overall Interaction on the Postbuckling of Uniformly Compressed Channels," *Thin-Walled Structures*, 3:293-321.

M. Pignataro, A. Luongo and N. Rizzi. On the effect of the local-overall interaction on the post-buckling of uniformly compressed channels. *Thin-Walled Structures*, 3:1470-1486, 1986

M. Pignataro and A. Luongo, "Asymmetric interactive buckling of thin-walled columns with initial imperfections", *Thin-Walled Structures*, Vol. 5, No. 5, 1987, pp. 365-382

Luongo, A. and Pignataro, M. (1988). Multiple interaction and localization phenomena in the postbuckling of compressed thin-walled members. *AIAA Journal* 26(11), 1395-1417.

Luongo, A., Pignataro, M.: A nonstandard perturbation analysis of the interaction buckling in nearly symmetric systems. Report 7, Univ. di Roma, Rome, Italy, 1988.

Luongo, A., Pignataro, M.: Interactive buckling of nearly symmetric systems; A nonstandard perturbation approach. *Cony. Naz. di Mecc. Mat. i Strutt.*, Roma, Italy, 1989, 147–155.

M. Pignataro, N. Rizzi and A. Luongo, *Stability, Bifurcation and Postcritical Behavior of Elastic Structures*. , Elsevier, Amsterdam (1991).

Luongo, A., 'On the amplitude modulation and localization phenomena in interactive buckling problems', *International Journal of Solids and Structures* 27 (15), 1991, 1943–1954.

Luongo, A., 'Perturbation methods for the eigenvalue analysis of imperfect systems with high modal density', Parts I and II, *Accademia Peloritana dei Pericolanti, Messina (Italy)*, Vol. LXVIII, 401–423, 1991, 424–447 [in Italian].

A. Luongo and M. Pignataro, "On the perturbation analysis of interactive buckling in nearly symmetric structures", *International Journal of Solids and Structures*, Vol. 29, No. 6, 1992, pp. 721-733

Luongo, A., 'Mode localization by structural imperfections in one-dimensional continuous systems', *Journal of Sound and Vibration* 155 (2), 1992, 249–271.

Luongo, A., 'Eigensolutions sensitivity for nonsymmetric matrices with repeated eigenvalues', *AIAA Journal* 31 (7), 1994, 1321–1328.

Luongo, A., 'Eigensolutions of perturbed nearly-defective matrices', *Journal of Sound and Vibration* 185 (3), 1995, 377–395.

Luongo A., Paolone A.: Perturbation methods for bifurcation analysis from multiple nonresonant complex eigenvalues. *Nonlinear Dyn.* 14, 193–210 (1997)

Luongo A., Paolone A.: Multiple scale analysis for divergence-Hopf bifurcation of imperfect symmetric systems. *J. Sound Vib.* 218, 527–539 (1998)

Angelo Luongo, "Mode localization in dynamics and buckling of linear imperfect continuous structures", Chapter in *Normal Modes and Localization in Nonlinear Systems*, edited by A. F. Vakakis, Springer, 2001, pp 133-156

Luongo A., Paolone A., Di Egidio A.: Multiple timescales analysis for 1:2 and 1:3 resonant Hopf bifurcations. *Nonlinear Dyn.* 34, 269–291 (2003)

Di Egidio A., Luongo A., Paolone A.: Linear and non-linear interactions between static and dynamic bifurcations of damped planar beams. *Int. J. Non-Linear Mech.* 42, 88–98 (2007)

Ranzi G, Luongo A (2011) A new approach for thin-walled member analysis in the frame work of GBT. *Thin Walled Struct* 49:1404–1414