

Charis J. GANTES, Ph.D.

Professor of Structural Engineering

Institute of Steel Structures - Department of Structural Engineering - School of Civil Engineering
National Technical University of Athens

9 Heroon Polytechniou Street, GR-157 80, Zografou Campus, Athens, Greece

tel. + 30 210 7723440 - telefax + 30 210 7723442

E-mail: chgantes@central.ntua.gr, chgantes@alum.mit.eduWeb: <http://users.civil.ntua.gr/chgantes/en/> - LinkedIn: www.linkedin.com/in/CharisGantes**SUMMARY OF ACTIVITIES IN DESIGN OF TENSION STRUCTURES****DESIGN AND CONSULTING ACTIVITY**

- Consultant for the structural condition assessment of guyed steel towers in Akrotiri Base, Cyprus (2020).
- Consultant for the structural design of replacement of the guyed tower “Steel Cross” in the Old Fortress of Corfu due to severe deterioration of the old structure (2019).
- Consultant for the structural assessment of retractable membrane roofs with peripheral cables and supporting steel structures of Avenue Mall, in Athens, Greece (2015).
- Participation in the special working group set up by the Greek Ministry of Public Works to investigate the reasons and consequences of a failure due to fire in one of the cables of the cable-stayed Rion-Antirion Bridge (2005-2006).
- Structural design of 50m to 60m tall guyed towers for wind measurements (2003-2005).
- Consultant for the structural design of the cable-suspended steel roof at the archaeological site “Aristotle’s Lyceum” on Rigillis Street in Athens (2002-2008).
- Evaluation of carrying capacity, modification and strengthening design of a 250 m tall guyed tower of the Greek Navy in Kato Souli, due to nearby construction of rowing facilities for the Athens 2004 Olympic Games (2000-2001).
- Structural failure analysis of a 1800 ft tall guyed tower that collapsed under wind and ice loads in Tulsa, Oklahoma, U.S.A. (1989-1990).

TEACHING

- “Design of Cable and Membrane Structures”, Interdepartmental Postgraduate Program “Structural Analysis and Design”, N.T.U.A.

FUNDED RESEARCH PROJECTS

- “Dynamic wind-cable interaction”, PEVE-2007 funded by the National Technical University of Athens, P.I. (2007-2009).

SUPERVISION OF DOCTORAL THESES

- Isabella Vassilopoulou (November 2011), "Nonlinear Dynamic Response and Design of Cable Nets".
<http://dx.doi.org/10.12681/eadd/26130>

CLASS NOTES

- Gantes, C.J., “Design of Cable and Membrane Structures”, Class notes, N.T.U.A. (in progress).

BOOK CHAPTERS

- Vassilopoulou, I. and Gantes, C.J., “Nonlinear Dynamic Response of MDOF Cable Nets Estimated by Equivalent SDOF Models”, *Computational Methods in Earthquake Engineering, Computational Methods in Applied Sciences*, Vol. 30, edited by M. Papadrakakis, M. Fragiadakis and V. Plevris, Springer Verlag, pp. 345-379, 2013.

doi: http://dx.doi.org/10.1007/978-94-007-6573-3_17

JOURNAL PUBLICATIONS

- Vassilopoulou, I., Petrini, F. and Gantes, C.J., “Nonlinear Dynamic Behavior of Cable Nets Subjected to Wind Loading”, *Structures*, Vol. 10, pp. 170-183, May 2017.

doi: <http://dx.doi.org/10.1016/j.istruc.2017.03.004>

- Vassilopoulou, I. and Gantes, C.J., “Influence of a Deformable Contour Ring on the Nonlinear Dynamic Response of Cable Nets”, *Structures*, Vol. 6, pp. 146-158, May 2016.

doi: <http://dx.doi.org/10.1016/j.istruc.2016.02.007>

- Margariti, G. and Gantes, C.J., “Linear and Nonlinear Buckling Response and Imperfection Sensitivity of Cable-Stayed Masts and Pylons”, *Structural Engineering International*, Vol. 25, Number 1, pp. 43-49, Feb. 2015.

doi: <http://dx.doi.org/10.2749/101686614X14043795570255>

- Margariti, G. and Gantes, C.J., “Critical Buckling Load and Nonlinear Post-Buckling Response of Guyed Towers”, *Journal of the International Association for Shell and Spatial Structures (IASS Journal)*, Vol. 55, No. 4, n. 182, pp. 229-235, December 2014.

<https://www.ingentaconnect.com/content/iass/jiass/2014/00000055/00000004/art00006>

- Vassilopoulou, I. and Gantes, C.J., “Nonlinear Dynamic Phenomena in a SDOF Model of Cable Net”, *Archive of Applied Mechanics*, Vol. 82, Issue 10-11, pp. 1689-1703, October 2012.

doi: <http://dx.doi.org/10.1007/s00419-012-0660-2>

- Vassilopoulou, I. and Gantes, C.J., “Nonlinear Dynamic Behavior of Saddle Form Cable Nets under Uniform Harmonic Load”, *Engineering Structures*, Vol. 33, Issue 10, pp. 2762-2771, October 2011.

doi: <http://dx.doi.org/10.1016/j.engstruct.2011.06.001>

- Vassilopoulou, I. and Gantes, C.J., “Vibration Modes and Natural Frequencies of Saddle Form Cable Nets”, *Computers & Structures*, Vol. 88, Issues 1-2, pp. 105-119, January 2010.

doi: <http://dx.doi.org/10.1016/j.compstruc.2009.07.002>

- Vassilopoulou, I. and Gantes, C.J., “Cable Nets with Elastically Deformable Edge Ring”, *International Journal of Space Structures*, Volume 20, Number 1, pp. 15-34, March 2005.

doi: <http://dx.doi.org/10.1260/0266351054214353>

- Gantes, C.J., Khoury, R., Connor, J.J. and Pouangare, C., “Modeling, Loading, and Preliminary Design Considerations for Tall Guyed Towers”, *Computers & Structures*, Vol. 49, Issue 5, pp. 797-805, December 1993.

doi: [http://dx.doi.org/10.1016%2f0045-7949\(93\)90027-B](http://dx.doi.org/10.1016%2f0045-7949(93)90027-B)

CONFERENCE PUBLICATIONS

- Margariti, G. and Gantes, C.J., “Analytical Estimation of Critical Buckling Load and Nonlinear Buckling Response of Guyed Towers”, *IASS-SLTE 2014 Symposium*, Brasilia, Brazil, Sep. 15-19, 2014.

- Kougioumtzoglou, I.A., Vassilopoulou, I. and Gantes, C.J., “Stochastic Response Determination and Reliability Assessment of a Nonlinear Cable Net Structural System”, *COMPADYN 2013: 4th International*

Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Kos, Greece, June 12-14, 2013, pp. 1230-1248.

- Gantes, C.J. and Koulatsou, K., “Optimum Locations, Cross-Sections and Prestressing Forces of Cables of Suspended Roof Covering Aristotle’s Lyceum”, *7th Greek National Steel Structures Conference*, Volos, Sep. 29 - Oct. 1, 2011 (in Greek with English summary).
- Vassilopoulou, I., Gantes, C.J. and Gkimousis, I., “Response of Cable Networks under Wind Loading”, *7th Greek National Steel Structures Conference*, Volos, Sep. 29 - Oct. 1, 2011 (in Greek with English summary).
- Gkagka, E.E., Kalochairetis, K.E. and Gantes, C.J., “Investigation of Alternative Structural Systems of Cable-Stayed Pedestrian Bridge”, *7th Greek National Steel Structures Conference*, Volos, Sep. 29 - Oct. 1, 2011 (in Greek with English summary).
- Vassilopoulou, I. and Gantes, C.J., “Nonlinear Dynamic Behaviour of Saddle Shaped Cable Nets under Wind Action”, *35th International Symposium on Bridge and Structural Engineering*, jointly organised by IABSE-IASS, London, England, September 20-23, 2011.
- Douthe, C. and Gantes, C.J., “Investigation of Coupling between External and Parametric Resonances in Small Sagged Inclined Cables”, *CompDyn 2011: III ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, Corfu, Greece, May 25-28, 2011.
- Vassilopoulou, I. and Gantes, C.J., “Nonlinear Dynamic Behaviour of a Saddle Form Cable Net Modeled by an Equivalent SDOF Cable Net”, *CompDyn 2011: 3rd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, Corfu, Greece, May 26-28, 2011.
- Vassilopoulou, I. and Gantes, C.J., “Sensitivity Criteria of Cable Networks against Fatigue Phenomena”, *6th Greek National Steel Structures Conference*, Ioannina, 2-4 Oct. 2008, Vol. II, pp. 134-141 (in Greek with English summary).
- Vassilopoulou, I. and Gantes, C.J., “Modal Transition and Dynamic Nonlinear Response of Cable Nets under Fundamental Resonance”, *8th HSTAM International Congress on Mechanics*, Patras, Greece, July 12-14, 2007, pp. 787-794.
- Vassilopoulou, I. and Gantes, C.J., “Vibration Modes and Dynamic Response of Saddle Form Cable Nets under Sinusoidal Excitation”, *EUROMECH Colloquium 483: Geometrically Non-linear Vibrations of Structures*, Porto, Portugal, 9-11 July 2007.
- Vassilopoulou, I. and Gantes, C.J., “Similarity Relations for Nonlinear Dynamic Oscillations of Cable Nets”, *CompDyn 2007: Computational Methods in Structural Dynamics and Earthquake Engineering*, Rethymnon, Crete, Greece, June 13-15, 2007.
- Maniadis, E.A. and Gantes, C.J., “Special Issues of Nonlinear Analysis of Cables and Cable Structures”, *5th Greek National Steel Structures Conference*, Xanthi, 29 Sep.-2 Oct. 2005, E. Galousis, I. Ermopoulos, Ch. Calfas Eds., Vol. II, pp. 297-304 (in Greek with English summary).
- Vassilopoulou, I. and Gantes, C.J., “Behavior, Analysis and Design of Cable Networks Anchored to a Flexible Edge Ring”, *IASS2004: Shells and Spatial Structures from Models to Realization*, Montpellier, France, Sept. 20-24, 2004, edited by R. Motro, IASS, pp. 212-213.
- Limberis, N.P. and Gantes, C.J., “Structural Behavior, Preliminary Design, and Cost Optimization for Cable-Supported and Cable-Stayed Bridges”, *4th Greek National Conference on Steel Structures*, Patra, Greece, May 24-25, 2002, edited by D.E. Beskos, D.L. Karabalis and A.N. Kounadis, Vol. 2, pp. 536-544.
- Gantes, C.J., Spiliopoulos, A. and Rouvalis, C., “Behavior, Simulation and Analysis of Guyed Towers”, *4th Greek National Conference on Steel Structures*, Patra, May 24-25, 2002, edited by D.E. Beskos, D.L. Karabalis and A.N. Kounadis, Vol. 2, pp. 554-562.

- Vassilopoulou, I. and Gantes, C.J., “Behaviour and Preliminary Analysis of Cable Net Structures with Elastic Supports”, *4th Greek National Conference on Steel Structures*, Patra, Greece, May 24-25, 2002, edited by D.E. Beskos, D.L. Karabalis and A.N. Kounadis, Vol. 2, pp. 517-525.
- Gantes, C., “Preliminary Design of Guyed Towers Using Axiomatic Principles”, Eurosteel '95, *1st European Conference on Steel Structures*, Athens, Greece, May 18-20, 1995, edited by A.N. Kounadis, A.A. Balkema Publications, Rotterdam, pp. 421-428.