November 2020

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.edu
Web: http://users.civil.ntua.gr/chgantes/en/ - Linkedin: www.linkedin.com/in/CharisGantes

SUMMARY OF ACTIVITIES IN DESIGN OF STEEL ARCHES AND EFFECTS OF THEIR COLD CURVING PROCESS

DESIGN AND CONSULTING ACTIVITY

- Participation in the preliminary, final and construction structural design of the new football stadium (42,000 seats) of the major Greek football team Panathinaikos, in Athens (2006-2009).
- Checking and modification of the structural design performed by S. Calatrava Design Office for the steel structure of the Entrance Canopies of the Athens 2004 Olympic Complex (2003).
- 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).
- Structural design of pedestrian bridge in the archaeological site of Ancient Olympia (2002).

FUNDED RESEARCH PROJECTS

- "DeReStAr—Development of structural DEsign REcommendations for Steel ARches", Marie Curie — Intra-European Fellowships, budget 116,808.55€, P.I. (2009-2010).

SUPERVISION OF DOCTORAL THESES

- Ilias Thanasoulas (January 2020), "Stability Criteria for Tubular-Section Steel Arches".

  https://www.didaktorika.gr/eadd/handle/10442/47176

JOURNAL PUBLICATIONS

- Thanasoulas, I.D. and Gantes, C.J., "Stability Criteria for Roller-Bent Circular-Hollow-Section Steel Arches", *Journal of Constructional Steel Research*, Vol. 176, 106431, Jan. 2021.

  doi: https://doi.org/10.1016/j.jcsr.2020.106431
- Thanasoulas, I.D. and Gantes, C.J., "Numerical Investigation on the Residual Stresses of Roller-Bent Circular-Hollow-Sections", *Journal of Constructional Steel Research*, Vol. 164, 105777, Jan. 2020.

  doi: https://doi.org/10.1016/j.jcsr.2019.105777
- Thanasoulas, I.D., Douthe, C.E., Gantes, C.J. and Lignos, X.A., "Influence of Roller Bending on RHS Steel Arches: Experimental and Numerical Investigation", *Thin-Walled Structures*, Vol. 131, pp. 668-680, Oct. 2018.

  doi: https://doi.org/10.1016/j.tws.2018.07.027
- Vassilopoulou, I., Kaymenaki, V., Gantes, C.J. and Bouckovalas, G., "Criteria for Preliminary Design of an Arched Steel Bridge on Shallow Foundation under Soil Liquefaction Conditions", *The Open Civil Engineering Journal*, Bentham Open, Vol. 11, Suppl-5, M10, pp. 1170–1190, 2017.

  doi: http://dx.doi.org/10.2174/1874149501711011170

- Hadjioannou, M., Douthe, C. and Gantes, C.J., "Influence of Cold Bending on the Resistance of Wide Flange Members", *International Journal of Steel Structures*, Vol. 13, Issue 2, pp. 353-366, June 2013.

  doi: http://dx.doi.org/10.1007/s13296-013-2013-6

- Dimopoulos, C.A. and Gantes, C.J., "Nonlinear In-Plane Behavior of Circular Steel Arches with Hollow Circular Cross-Section", *Journal of Constructional Steel Research*, Vol. 64, Issue 12, pp. 1436-1445, December 2008.

  doi: http://dx.doi.org/10.1016/j.jcsr.2008.01.005

- Dimopoulos, C.A. and Gantes, C.J., "Design of Circular Steel Arches with Hollow Circular Cross-Sections According to EC3", *Journal of Constructional Steel Research*, Vol. 64, Issue 10, pp. 1077-1085, October 2008.

  doi: http://dx.doi.org/10.1016/j.jcsr.2007.09.009

- Gantes, C.J. and Konitopoulou, E., "Geometric Design of Arbitrarily Curved Bi-Stable Deployable Arches with Discrete Joint Size", *International Journal of Solids and Structures*, Vol. 41, Issue 20, pp. 5517-5540, October 2004.

  doi: http://dx.doi.org/10.1016/j.ijsolstr.2004.04.030

CONFERENCE PUBLICATIONS

- Thanasoulas, I.D. and Gantes, C.J., "Effects of Roller-Bending on Curved Constructional Steels of Rectangular Hollow Section", *International Association for Shell and Spatial Structures (IASS) Symposium 2018 - Creativity in Structural Design*, Boston, U.S.A., July 16-20, 2018.

  doi: http://dx.doi.org/10.5281/zenodo.3560002

- Psychari, A., Vassilopoulou, I. and Gantes, C.J., "Sensitivity of a Steel Arch Road Bridge to Imposed Foundation Displacements and Rotations", *International Conference CESARE'14 - Civil Engineering for Sustainability and Resilience*, C.C. Baniotopoulos and K.M. Abdalla (eds.), Amman, Jordan, Apr. 24-27, 2014.

- Hadjioannou, M., Douthe, C. and Gantes, C.J., "Elastoplastic Behavior of Cold Bent Wide Flange Sections", *7ο Εθνικό Συνέδριο Μεταλλικών Κατασκευών,* Βόλος, 29-30 Σεπ. και 1 Οκτ. 2011.

- Douthe, C., Adamakos, K., Gantes, C.J. and Lignos, X., "Experimental Testing of Arches with Rectangular Hollow Sections", *6th European Conference on Steel and Composite Structures*, Budapest, Hungary, Aug. 31 - Sep. 2, 2011, pp. 2181-2186.

- Hadjioannou, M., Douthe, C. and Gantes, C.J., "Infuence of Residual Sresses Induced by Cold Curving on the Resistance of I-Section Steel Members", *6th European Conference on Steel and Composite Structures*, Budapest, Hungary, Aug. 31 - Sep. 2, 2011, pp. 729-735.

- Douthe, C. and Gantes, C.J., "In-Plane Stability of Uniformly Prestressed Elastic Circular Arches", *6ο Εθνικό Συνέδριο Μεταλλικών Κατασκευών*, Ιωάννινα, 2-4 Οκτ. 2008, Τόμος Ι, σελ. 312-319.

- Dimopoulos, C.A. and Gantes, C.J., "Design of Fixed Circular Arches with Tube Cross-Sections under Concentrated Loads According to EC3", *5th European Conference on Steel and Composite Structures*, Graz, Austria, Sep. 3-5, 2008, pp. 785-790.

- Vassilopoulou, I., Chatzifoti, A. and Gantes, C.J., "Design and Construction of the Athens Olympic Sports Complex Entrance Canopies", *5th Greek National Steel Structures Conference*, Xanthi, 29 Sep.-2 Oct. 2005, E. Galousis, I. Ermopoulos, Ch. Calfas Eds., Vol. II, pp. 77-84 (in Greek with English summary).

- Gantes, C.J. and Konitopoulou, E., "Snap-Through-Type Deployable Arches of Arbitrary Curvature", *4th German-Greek-Polish Symposium on Advances in Mechanics*, Pultusk, Poland, Sept. 18-22, 2001.