

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**AREAS OF SPECIALIZATION**

Structural analysis and design with emphasis on steel structures, earthquake-resistant design, evaluation of ultimate capacity of structures under extreme loading including seismic, wind and blast, employing mostly numerical (finite elements) but also experimental and analytical methods, nonlinear behavior, structural stability, connections in steel structures, unconventional industrial steel structures, steel structures for energy applications, steel structures for marine applications, wind turbine towers, tension structures, deployable structures, buried pipelines.

EDUCATION

- Ph.D. in Structural Engineering, M.I.T., 1991.
- Master of Science (S.M.) in Civil Engineering, M.I.T., 1988.
- Diploma in Civil Engineering, National Technical University of Athens, Greece, 1985.
- Abitur, German Highschool of Athens, Dörpfeld Gymnasium, June 1979.

ACADEMIC ACTIVITIES

- Professor, Institute of Steel Structures, Civil Engineering Department, National Technical University of Athens, Greece. Activities and distinctions include:
 - Teaching of the compulsory courses “Steel structures I” (6th semester), “Steel structures II” (7th semester), the elective course “Nonlinear behavior of steel structures” (9th semester) and the graduate courses “Design of tension structures” and “Steel structures for marine applications”.
 - Teaching of “Steel structures” in the 1st, 2nd and 3rd year in the School of Technical Education of the Hellenic Greek Army Corps of Engineers.
 - Supervision (since 1994) of 165 diploma theses, 60 graduate theses as well as 9 completed and 5 ongoing Ph.D. theses.
 - Research activity in the area of structural behavior, analysis and design under extreme loads, including seismic, wind and blast, leading structures to nonlinear response, with emphasis on steel structures. Author of one book in English, two books in Greek, one set of class notes (in Greek), two collective volumes, 10 book chapters, 98 technical papers published or accepted in international journals, 176 technical papers published in proceedings of international conferences, and several technical reports. Participation in and direction of several research projects.
 - Member of the Greek mirror Committee of CEN/TC250, ELOT/TE67 Committee on “Eurocodes”, Coordinator of the Greek mirror Group of CEN/TC250/SC3, ELOT TE67/OE3 “Eurocode 3” and representative of Greece in Committee CEN/TC250/SC3 for Eurocode 3 of the European Committee for Standardization, CEN.
 - Member of CEN Project Team SC3/T1 of of EN1993-1-1 (Part 1-1 of Eurocode 3), General rules and rules for buildings, Mandate M/515 phase 1 tasks for the development of the second generation of Eurocodes.
 - Member of CEN Project Team SC3/T11 of EN1993-3 (Part 3 of Eurocode 3), Masts, towers and chimneys - Consolidation and rationalisation of EN 1993-3, Mandate M/515 phase 4 tasks for the development of the second generation of Eurocodes.
 - Member of CEN/TC250/SC3/WG14 (Technical Committee 250 on Structural Eurocodes, Subcommittee 3 on Eurocode 3 - Design of steel structures, Working Group 14 on Evolution of EN 1993-3 - Towers, masts and chimneys).
 - Editor-in-Chief of the *Journal of the International Association for Shell and Spatial Structures* (IASS), Associate Editor of *Frontiers in Built Environment* and Member of the Editorial Boards of the *International Journal of Space Structures* and of *WIT Transactions*.

- Section Editor of *Structural Analysis for Earthquake Resistant Design* of the *Encyclopedia of Earthquake Engineering* by Springer Verlag.
- Correspondent for Greece of *Structural Engineering International* (SEI), the journal of the International Association for Bridges and Structural Engineering (IABSE).
- Research awards from Fulbright Foundation and the British Royal Society.
- More than 1700 citations of his research work (excluding self-citations and citations by co-authors) and a value of h-factor equal to 20, combining citations from search engines [Scopus](#), [Web of Science](#) και [Google Scholar](#).
- Member of the Executive Council of the International Association for Shell and Spatial Structures (IASS).
- Member of IASS (International Association for Shell and Spatial Structures) Working Groups WG4: Technical Expert Group on Masts and Towers and WG8: Metal Spatial Structures.
- Member of several Greek and international scientific and professional organizations and working groups, reviewer for more than 50 international journals, member of publishing boards and co-organizer of Greek and international conferences.

SELECTED RECENT RESEARCH PUBLICATIONS

- Sakka, E.G., Bilionis, D.V., Vamvatsikos, D. and Gantes, C.J., “Onshore Wind Farm Siting Prioritization Based on Investment Profitability for Greece”, *Renewable Energy*, Vol. 146, pp. 2827-2839, Feb. 2020.
- Valsamis, A.I., Bouckovalas, G.D. and Gantes, C.J., “Alternative Design of Buried Pipelines at Active Fault Crossings Using Flexible Joints”, *International Journal of Pressure Vessels and Piping*, Vol. 180, 104038, Jan. 2020.
- 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.
- Vernardos, S. and Gantes, C.J., “Experimental Behavior of Concrete-Filled Double-Skin Steel Tubular (CFDST) Stub Members under Axial Compression: A Comparative Review”, *Structures*, Vol. 22, pp. 383-404, Dec. 2019.
- 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.
- Thanasoulas, I.D., Vardakoulias, I.K., Kolaitis, D.I., Gantes, C.J. and Founti, M.A., “Coupled Thermo-Mechanical Simulation for the Performance-based Fire Design of CFS Drywall Systems”, *Journal of Constructional Steel Research*, Vol. 145, pp. 196-209, June 2018.
- 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.
- Melissianos, V.E., Vamvatsikos, D. and Gantes, C.J., “Performance Assessment of Buried Pipelines at Fault Crossings”, *Earthquake Spectra*, Vol. 33, No. 1, pp. 201-218, Feb. 2017.
- Melissianos, V.E., Lignos, X.A., Bachas, K.K. and Gantes, C.J., “Experimental Investigation of Pipes with Flexible Joints under Fault Rupture”, *Journal of Constructional Steel Research*, Vol. 128, pp. 633-648, Jan. 2017.
- Melissianos, V.E. and Gantes, C.J., “Evaluation of Seismic Protection Methods for Buried Fuel Pipelines Subjected to Fault Rupture”, *Frontiers in Built Environment*, Vol. 2, Article 34, 2016.
- 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.
- Olmati, P., Petrini, F., Vamvatsikos, D. and Gantes, C.J., “Simplified Fragility-Based Risk Analysis for Impulse Governed Blast Loading Scenarios”, *Engineering Structures*, Vol. 117, pp. 457-469, June 2016.
- Dimopoulos, C.A., Koulatsou, K., Petrini, F. and Gantes, C.J., “Assessment of Stiffening Type of the Cutout in Tubular Wind Turbine Towers under Artificial Dynamic Wind Actions”, *Journal of Computational and Nonlinear Dynamics (ASME)*, Vol. 10, No. 4, pp. 041004-1 - 041004-9, July 2015.
- Kalochairetis, K.E. Gantes, C.J. and Lignos, X.A., “Experimental and Numerical Investigation of Eccentrically Loaded Laced Built-Up Steel Columns”, *Journal of Constructional Steel Research*, Vol. 101, pp. 66-81, October 2014.
- 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.

- ❑ Gantes, C.J. and Bouckovalas, G.D., “Seismic Verification of High Pressure Natural Gas Pipeline Komotini - Alexandroupolis - Kipi in Areas of Active Fault Crossings”, *Structural Engineering International*, Vol. 23, Number 2, pp. 204-208, May 2013.
- ❑ Vassilopoulou, I. and Gantes, C.J., “Nonlinear Dynamic Phenomena in a SDOF Model of Cable Net”, *Archive of Applied Mechanics*, Vol. 82, pp. 1689-1703, 2012.
- ❑ Gantes, C.J. and Kalochairetis, K.E., “Axially and Transversely Loaded Timoshenko and Laced Built-up Columns with Arbitrary Supports”, *Journal of Constructional Steel Research*, Vol. 77, pp. 95-106, Oct. 2012.
- ❑ Dimopoulos, C.A. and Gantes, C.J., “Experimental Investigation of Buckling of Wind Turbine Tower Cylindrical Shells with Opening and Stiffening under Bending”, *Thin-Walled Structures*, Vol. 54, pp. 140-155, May 2012.
- ❑ Gantes, C.J., “Deployable Structures”, *Fifty Years of Progress for Shell and Spatial Structures: 50th Jubilee of the IASS*, edited by I. Mungan and J.F. Abel, pp. 373-390, 2011.
- ❑ Akgün, Y., Gantes, C.J., Sobek, W., Kalochairetis, K.E. and Korkmaz, K., “A Novel Adaptive Spatial Scissor-Hinge Structural Mechanism for Convertible Roofs”, *Engineering Structures*, Vol. 33, pp. 1365-1376, Apr. 2011.
- ❑ Pnevmatikos, N.G. and Gantes, C.J., “Control Strategy for Mitigating the Response of Structures Subjected to Earthquake Actions”, *Engineering Structures*, Vol. 32, pp. 3616-3628, Nov. 2010.
- ❑ Papageorgiou, A.V. and Gantes, C.J., “Decoupling Criteria for Inelastic Irregular Primary/Secondary Structural Systems Subject to Seismic Excitation”, *Journal of Engineering Mechanics ASCE*, Vol. 136, No. 10, pp. 1234-1247, Oct. 2010.
- ❑ Gantes, C.J., and Fragkopoulos, K.A., “Strategy for Numerical Verification of Steel Structures at the Ultimate Limit State”, *Structure and Infrastructure Engineering*, Vol. 6, pp. 225-255, 2010.
- ❑ Lemonis, M.E. and Gantes, C.J., “Mechanical Modeling of the Nonlinear Response of Beam-to-Column Joints”, *Journal of Constructional Steel Research*, Vol. 65, pp. 879-890, 2009.
- ❑ 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, pp. 1077-1085, 2008.
- ❑ Kouretzis, G.P., Bouckovalas, G.D. and Gantes, C.J., “3-D Shell Analysis of Cylindrical Underground Structures under Seismic Shear (S) Wave Action”, *Soil Dynamics and Earthquake Engineering*, Vol. 26, pp. 909-921, Oct. 2006.
- ❑ Gantes, C.J., *Deployable Structures - Analysis and Design*, WIT Press, Southampton, England, 2001.

PROFESSIONAL EXPERIENCE

- ❑ Collaboration with design offices and construction companies for structural consulting and design of a variety of projects including:
 - Steel and reinforced concrete buildings.
 - Condition assessment and strengthening of old steel, reinforced concrete and masonry structures.
 - Large-span steel structures for athletic, industrial and commercial facilities.
 - Power plant and waste treatment plant structures and other energy related industrial facilities.
 - Wind turbine towers and foundation.
 - Buried pipelines transporting oil and natural gas.
 - Port and marine facilities.
 - Guyed towers.
 - Temporary bracing for deep excavations.
 - Structures for the 2004 Athens Olympic Games.
 - Highway infrastructure projects including structures for “Attiki Odos”, the Athens peripheral highway.
 - Underground structures including tunnels and stations for “Attiko Metro”, the Athens subway.
- ❑ Participation in expert committees for the resolution of technical differences.

SELECTED DESIGN AND CONSULTING PROJECTS

- ❑ Evaluation of mechanical characteristics of typical steel specimens of old steel structures at the Educational Center of the Greek Fire Department in Nea Makri, Greece, by means of on-site measurements, experimental tests and statistical evaluation (2020).
- ❑ Consultant of ATEC Wind Power for optimization of wind turbine towers (2020).
- ❑ Assessment of the influence of wall dents on the strength of Trans Adriatic Pipeline (TAP), Greece (2019).
- ❑ Consultant for the structural condition assessment and design of strengthening of the old masonry building “Boys’ and girls’ school” in Delvinaki, Pogoni, Greece (2019-2020).
- ❑ 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 design of the new passengers’ terminal in Souda Harbor, Crete, Greece (2018-2020).
- ❑ Evaluation of bearing capacity and design of strengthening measures of the steel structure of the “French Dock”, dating back to 1885, serving loading purposes on ships of the French Lavrion Mining Company, in Lavrio, Attica, Greece (2018-2019).
- ❑ Consultant for the structural design of the industrial, storage and office facilities of STOP AEBE in Piraeus, Greece (2018-2019).
- ❑ Consultant for the structural design of steel structures providing temporary support for the excavations associated with cut-and-cover construction of the Bombay Metro, India (2017-2018).
- ❑ Consultant for the structural assessment and evaluation of necessity of strengthening of old steel structures of ore storage facilities and loading dock in industrial facilities of “Hellas Gold” in Stratoni, Chalkidiki (2017).
- ❑ Checker of the structural design of steel structures providing temporary support for the deep excavations associated with the construction of One Tower, in Limassol, Cyprus (2017-2018).
- ❑ Consultant for the structural design of extensions of Thessaloniki Airport in Greece (2017-2018).
- ❑ Consultant for the structural design of extensions of Kavala Airport in Greece (2017-2018).
- ❑ Consultant for the structural assessment and evaluation of necessity of strengthening of the steel roof of Corfu Airport in Greece (2016).
- ❑ Consultant for the applicability of rigid stainless steel rods as hangers for the suspended steel roof of LNG tank in Revithousa, Greece (2016).
- ❑ Consultant for the final structural design of industrial facilities of “Hellas Gold” in Olympias, Chalkidiki (2016).
- ❑ Consultant for the construction structural design of industrial facilities of “Hellas Gold” in Skouries, Chalkidiki (2016).
- ❑ Consultant for the structural design of the steel structure supporting the cladding of the “Oval Tower” in Limassol, Cyprus (2015-2016).
- ❑ Consultant for the structural assessment of retractable membrane roofs and supporting steel structures of Avenue Mall, in Athens, Greece (2015).
- ❑ Preliminary structural design of steel scaffolding and auxiliary structures for the reconstruction of the old historical Plaka stone bridge in Epirus, Greece (2015).
- ❑ Consultant for the structural design of steel structures providing temporary support for the excavations associated with cut-and-cover construction of the Thessaloniki Metro, Greece (2014-2016).
- ❑ Consultant for the checking of structural design of stations and viaducts of “Red Line South Elevated and at Grade” of Doha Metro in Qatar (2014-2017).
- ❑ Consultant for the structural design of a 590.726MW Power Plant Project in Hassi R’Mel, Algeria (2014-2016).
- ❑ Consultant for the final structural design of industrial facilities of “Hellas Gold” in Stratoni, Chalkidiki (2014).
- ❑ Consultant for the structural condition assessment of the steel structure of the Air Cooled Condenser at Korinthos Power CCPP in Korinthos, Greece (2013-2014).
- ❑ Member of two Committees for Resolution of Technical Differences between the Greek State and the contracting consortium “Moreas S.A.” concerning the time table and payment orders related to the construction of the Highway Corinth-Tripolis-Kalamata and the branch Lefktro-Sparta (2013).

- ❑ Consultant for the structural design of a 368.152MW Power Plant Project in Hassi R'Mel, Algeria (2012-2015).
- ❑ Consultant for the evaluation of the causes and consequences of large amplitude vibrations of wind turbine towers in Koryfi, Serres, Greece (2013).
- ❑ Participation in the structural design of industrial facilities of "Hellas Gold" in Perama Hill, Thraki (2012-2013).
- ❑ Consultant for the structural design of Samra Power Station - Fast Track Simple Cycle Combustion Turbine Power Project in Samra, Jordan (2012-2013).
- ❑ Consultant for the structural design of solid household waste treatment facility in St. Petersburg, Russia (2012).
- ❑ Forensic investigation of the collapse of a steel sign bridge on the National Highway Schimatari-Chalkida (2012).
- ❑ Consultant for the design of steel superstructure supporting the heat recovery steam generators in power plant project in Denizli, Turkey (2012).
- ❑ Consultant for the tender structural design of Mechanical Biological Treatment plant (MBT) in Sofia, Bulgaria (2012).
- ❑ Consultant for the evaluation of available bearing capacity and strengthening of old steel cement loading tower damaged due to corrosion and ship impact in Vasilikos, Cyprus (2012).
- ❑ Consultant for the structural design of Waste Treatment Plant in Izmir, Turkey (2011-2012).
- ❑ Consultant for the structural design of Gas Power Plant in Shatt al Basrah, Iraq (2011-2012).
- ❑ Consultant for the structural design of a seawater supply pipeline network, part of a power generation and water desalination facility at Yanbu, Kingdom of Saudi Arabia (2011-2014).
- ❑ Consultant for the tender structural design of steel trestles, platforms and other harbour facilities in Vasilikos, Cyprus (2011).
- ❑ Evaluation of available bearing capacity and structural strengthening design of power production facility of the Greek Public Power Corporation on the island of Syros (2011).
- ❑ Participation in the preliminary structural design of industrial facilities of "Hellas Gold" in Stratoni, Chalkidiki (2010-2011).
- ❑ Consultant for the seismic upgrading of steel grandstand structures in outdoor Petra Theater in Petroupoli (2010).
- ❑ Participation in the preliminary structural design of the new football stadium (22,000 seats) of the A-League Greek football team PAS Giannina, in Giannina, Greece (2009-2010).
- ❑ Participation in the construction structural design of several reinforced concrete buildings for the Blue City project in Oman (2009-2010).
- ❑ Consultant for the tender structural design of steel trestles, platforms and other harbour facilities in Azzawiya, Libya (2009).
- ❑ Consultant for the construction structural design of power plant project in Thisvi, Greece (2009).
- ❑ Checking of structural design for all steel structures (toll booths, sign bridges, safety barriers etc.) associated with three major highways in Greece: PATHE, Ionia Odos and E65 (2008-2015).
- ❑ Structural strengthening of indoor sports hall in the Olympic Village, Thrakomakedones, Greece (2008).
- ❑ Consultant for the structural design of a steel building used as wind turbine tower fabrication yard of EMEK S.A. in Aghioi Theodoroi, Korinthia, Greece (2008).
- ❑ Structural design of steel structures for the entrance canopies of Argyroupoli and Ellinikon metro stations (2008).
- ❑ Failure investigation of steel scaffolding during construction of Chamezi Bridge, Crete (2008).
- ❑ Consultant for the influence of tunnel boring for the Thessaloniki metro on the buildings of the Aristotle University (2007-2008).
- ❑ Participation in the construction structural design of steel structures covering 50,000m² of the Athens Metropolitan exposition center next to the Athens International Airport (2007-2008).
- ❑ Investigation of bearing capacity of existing garage buildings of the Athens Trolley Company in Sepolia, Attica, Greece (2007).
- ❑ Participation in the structural design of three office buildings with 35 floors and 5 basements in Sofia, Bulgaria (2007-2008).

- ❑ 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).
- ❑ Participation in the structural design for the transformation of the International Broadcasting Center (I.B.C.) of the 2004 Athens Olympic Games into a commercial and business center (2006-2008).
- ❑ Consultant for the structural design of shading membranes between office buildings of Piraeus Bank in Cairo, Egypt (2006).
- ❑ Consultant for the structural design of the indoor sports gymnasium “Theseus” in Antikira, Viotia (2006).
- ❑ Member of special working group of the Greek Ministry of Public Works to investigate the reasons and consequences of a failure due to fire in a cable of the Rion-Antirion Bridge (2005).
- ❑ Checking of structural and foundation design of 49m tall wind turbine towers of type NEG-Micon 952 for a wind park in Xirolimni, Lasithi, Crete, Greece (2005).
- ❑ Foundation design of 41 44m tall wind turbine towers of type Vestas in a wind park on Panachaikon Mountain, in Greece (2004).
- ❑ Member of special working group of the Greek Ministry of Defense to prepare technical guidelines for designing new and strengthening existing fortification works buried in the ground (2004-2007).
- ❑ Verification of existing carrying capacity and evaluation of need for seismic strengthening of 3-story masonry building housing the offices of the Organization of Public Transportation of the city of Athens (2004).
- ❑ Checking and modification for construction of the structural design performed by S. Calatrava Design Office for steel structures of Entrance Canopies of the Athens 2004 Olympic Complex (2003-2004).
- ❑ Verification of existing carrying capacity and design of interventions for seismic strengthening of 2-story preservable masonry building dating from 1870, of the Corinthian Grapes Association in Korakochori, Ilia, Greece (2004)
- ❑ Consultant for the structural design of the steel roof of spectators’ stands in the new A.E.K. football stadium in Nea Philadelphia, Athens, Greece (2003).
- ❑ Structural verification of seismic performance of Natural Gas Pipeline (Section Kipi-Alexandroupoli-Komotini) subjected to possible landslides and seismic fault activation, in Thrace, Greece (2003).
- ❑ Structural design of the cable-suspended steel roof at the archaeological site of “Aristotle’s Lyceum” in Athens (2002-2009).
- ❑ Structural design of spectator stands steel structure for outdoor theatre and pedestrian arch bridge in the archaeological site of Ancient Olympia, in Greece (2002).
- ❑ Structural design of 49m tall Vestas wind turbine towers of “Plastika Kritis” and their foundation (2002).
- ❑ Structural design of steel hangar for Intralink factory in Thessaloniki (2002).
- ❑ Evaluation of carrying capacity and strengthening design of a 250 m tall guyed tower of the Greek Navy in Kato Souli, Greece (2000-2001).
- ❑ Seismic structural design of the “Thessaloniki-Skopia Oil Pipeline” in areas of potential faults and landslides (2000-2001).
- ❑ Design of technical works for the new Athens peripheral highway “Attiki Odos” (1999-2002).
- ❑ Qualitative and quantitative assessment of the analysis and design against earthquake actions of the underwater tunnel connecting Aktion and Preveza, in Greece (1999).
- ❑ Checking of structural design of temporary and permanent structures for cut & cover stations Panormou, Attiki, Neos Kosmos, Analatos, Megaro Mousikis and Evangelismos of the Athens subway (1994-1997).
- ❑ Participation in structural design of DELTA S.A. industrial facilities (steel structure used as yoghurt and ice-cream factory) in Agios Stefanos, Attica (1992-1994).
- ❑ 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).
- ❑ Checking of structural designs of bridges, culverts and conduits with total budget of 308.580.000 drh. and airport facilities in Karpathos, Lamia and Mitilini with total budget of 178.600.000 drh., as member of the design department of the Military Office for the Construction of Public Works (SYKEA), Athens (1985-1987).