



Enrique Hernández-Montes, PhD, CEE PE

Professor

ETSI de Caminos, Canales y Puertos

University of Granada

Born in Guadix –Granada county- Spain. February 10th 1968.

Education

Ph.D. Doctor Ingeniero de Caminos, Canales y Puertos, University of Granada (1995)

MEng Ingeniero de Caminos, Canales y Puertos, University of Granada (1992).

Award to the first of class (1992)

Fulbright senior award (2016)

IABSE Innovation in Construction 2023 Award (part of the team)

ACADEMIA

Research

Research Assistant at the University of Illinois, Urbana-Champaign (2 years). Wide variety of research topics with in structural engineering, with contributions in mechanics, theory of structures, reinforced concrete structures, earthquake engineering, steel structures, tension structures, tensegrity structures, history of science and engineering and engineering ethics.

Published 125 journal papers, mostly in the first quartile of the JCR (journal citation report). Principal investigator in several projects founded by national government and three by the European Community. Involved in two research projects of the National Science Foundation (USA).

Advisor of 10 PhD thesis. Among my former PhD students, there are: one Professor at Swansea University (UK), Associated Professors at: University of Bologna (Italy), University of Montenegro, Technical University of Madrid, University of Málaga, University of Granada and UPTC (Colombia), and two Assistant Professors at: University of Cádiz and Università della Svizzera Italiana,

Co-author of the Energy-based Push-over Analysis. The American provisions FEMA-440 proposes this type of analysis as one of the most accurate push-over methods for performance-based design in earthquake engineering.

Predated the discovery of the catenary as the true arch from XVII century (Robert Hooke) to VI century (Ferghan).

Teaching

Teaching, since 1993, in the Schools of Architecture and Civil Engineering at University of Granada. Courses taught: Analysis of Structures, Concrete Structures, Steel Structures, Strength of Materials and Ethics in Engineering.

Visiting Professor at the Politecnico di Milano (course “Advance Mechanics of Concrete Structures” year 2010/11), and at Santa Clara University (California) (course “Arches in historic construction” year 2016).

Text books:

- **Estructuras Metálicas y Mixtas.** 2019. Ed. Colegio de Ingenieros de Caminos. Seiner. Gil-Martín and Hernández-Montes
- **Design of Reinforced Concrete Buildings for Seismic Performance. Practical Deterministic and Probabilistic Approaches.** 2019. Francis & Taylor. CRC. Aschheim, Hernández-Montes and Vamvatsikos
- **Concrete Structures. Design and Residual capacity assessment.** 2024. Francis & Taylor. CRC. Hernández-Montes and Gil-Martín

PROFESSIONAL ENGINEERING

Regular consultant of Prointec S.A. during the period 2000-2010, one of the top five engineering consulting firms in Spain, with important international presence. Collaboration mainly in seismic design and high-speed track-structure interaction. Major contributions:

- Design supervisor of the project: “The Triple Bridges” in La Paz. Bolivia (2010)
- Design supervisor of the structural part of the project “The Arad Bypass” in Romania (2009).
- Programmer of an ANSYS-based software for high-speed track-structure interaction in curve trajectory (2008).
- Programmer of the reinforcing software of Prointec S.A.

Consultant at ERSI-Group (2015-present) one of the major reinforcing steel assemblers worldwide. Major contribution: designer of the earth retaining system in the construction of the line 6 of the underground in the Riyadh metro (Saudi Arabia). Using non-symmetrical reinforcement in piles, saving 50% of the initial amount of steel of the pile wall.

5 granted patents. The patent of the non-symmetrical pile wall has been extended to several countries, including USA.

MISCELLANY

Founder of the biennial International Congress of Mechanical Models in Structural Engineering CMMoST (2011, 2013, 2015, 2017, 2019, 2021 and 2023), indexed in the Web of Science.

Co-founder of the School of Parents of Saint John of God (Brothers Hospitallers of St. John of God) for families with disable children. 2018.