



Dr. Alessia Monaco

Assistant Professor in Structural Engineering
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🌐 https://www.swas.polito.it/rubrica/scheda_pers.asp?matricola=049977

Sex female | Date of birth 29/05/1985 | Nationality Italy

CURRENT POSITION

Assistant Professor in Structural Engineering

@Polytechnic of Turin (Italy) - Department of Architecture and Design

Main scientific interests: experimental, analytical and numerical modelling of Reinforced Concrete structures and Steel-Concrete Composite structures. Study of the mechanical behavior of semi-prefabricated steel trussed composite beams with particular focus on the shear response and the resistance of the connection. Numerical modelling of the steel-concrete cohesive interface. Numerical and analytical modelling of the monotonic and cyclic response of beam-to-column joints in framed structures. Finite element modeling of the buckling effects in tube steel shell elements. Simplified analytical models and detailed FEM analyses for the out-of-plane response of masonry walls strengthened by FRP reinforcement. The finite element models are mainly generated by means of the software Abaqus.

EDUCATION AND TRAINING

March 2014

Ph.D in Structural Engineering

at the University of Palermo – Italy, with the thesis entitled “EXPERIMENTAL ANALYSIS, NUMERICAL AND ANALYTICAL MODELING OF SHEAR STRENGTH MECHANISMS IN HYBRID STEEL TRUSSED CONCRETE BEAMS”, 319 pages, SSD ICAR/09, advisor Prof. Lidia La Mendola.

The purpose of the thesis is the study of the shear behavior of Hybrid Steel Trussed Concrete Beams (HSTCBs). Such beams represent a structural typology which usually consists of a steel truss embedded into a concrete core so that, after curing and maturation, the two materials behave as a unique structural system, the steel members working as the reinforcement of the beam itself. The research is conducted by means of experimental tests, analytical modelling and finite element analyses generated by means of the software Abaqus. Some of the results presented in the thesis have been obtained during the period of study spent at the University of Minnesota (USA) with the supervision of Prof. Roberto Ballarini and Prof. Jialiang Le.

August 2013 – December 2013

Research activity at the University of Minnesota (USA)

Supervisors: Prof. Roberto Ballarini, Ph.D., P.E., F.ASCE, F.EMI, Thomas and Laura Hsu Professor and Chair, Department of Civil and Environmental Engineering, Cullen College of Engineering, University of Houston, and Prof. Jialiang Le, Associate Professor, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota.

The research activity deals with a computational work aimed at developing finite element models of Hybrid Steel Trussed Concrete Beams (HSTCBs) adopting specific scaling criteria for the evaluation of the size effect on the shear behavior. The finite element models are generated by means of the software Abaqus. The comparison of all results between the different sizes of beam has been made and some design recommendations have been deduced, mainly focused on the ductility of structures.

April 2012 – July 2012

Research activity at the University of Salerno - Italy

Supervisor Prof. Gianvittorio Rizzano, Department of Civil Engineering, University of Salerno (Italy). The research activity deals with the finite element modelling of the steel-concrete connection of Hybrid Steel Trussed Concrete Beams. The study is performed by developing 3D models aimed at simulating the push-out test on specimens of the studied beam typology. The study is particularly focused on the implementation of a cohesive model for simulating the

steel-concrete interface behaviour while the concrete constitutive model is introduced using the "Concrete Damaged Plasticity Model". The finite element models are generated by means of the software Abaqus.

April 2010 **Professional Engineer**

registration at the professional register of Engineers of Trapani, n. A1629

November 2009 **Master degree in Architectural Engineering**

at the University of Palermo – Italy, with the voting of 110/110 and praise.

ACADEMIC POSITIONS

October 2018 – in progress **Assistant Professor in Structural Engineering**

at **Polytechnic of Turin (Italy) - Department of Architecture and Design**

Research activity on the design and strengthening of reinforced concrete structures and masonry buildings. Analysis of steel and steel-concrete composite systems. Research on innovative reinforcing technique for the improvement of the mechanical performance of existing constructions.

Teaching assistance for the "Morphology and concept of structures" class, School of Architecture.

January 2018 – October 2018 **Post-Doctoral Researcher**

at **University of Palermo, Department of Civil, Environmental, Aerospace and Material Engineering (DICAM)**

Research fellow on the topic "Feasibility study for innovative dissipative solutions for joints in seismic framed structures with RC columns and hybrid steel trussed beams". The research is funded by the consortium DICAM-SICILFERRO 2017 between the Department of Civil, Environmental, Aerospace and Material Engineering (DICAM) of University of Palermo and the Industry "SICILFERRO TORRENOVESE" in Messina (Italy). Supervisor Prof. Piero Colajanni, DICAM, University of Palermo.

April 2017 – October 2017 **Post-Doctoral Researcher**

at **University of Palermo, Department of Civil, Environmental, Aerospace and Material Engineering (DICAM)**

Research fellow on the topic "Variable inclination strut models for the shear resistance of reinforced concrete beams in diffusive zones in presence of two different inclination of transversal reinforcement". The research is funded by the consortium DICAM-RELUIS (Department of Civil, Environmental, Aerospace and Material Engineering - Italian Network of the University Laboratories of Earthquake Engineering). Supervisor Prof. Piero Colajanni, DICAM, University of Palermo.

March 2016 – September 2016 **Post-Doctoral employment contract**

at **University of Palermo, Department of Architecture (D'ARCH)**

Development of research activity on the topic "Numerical models for the evaluation of the out-of-plane behavior of masonry walls strengthened with FRP". The contract was established on March 7th 2016 by the Interdepartmental Research Institute for the study of Historical Centers CIRCES – Department of Architecture, University of Palermo.

February 2015 – August 2015 **Post-Doctoral Researcher**

at the University of Palermo, within the framework of the **national research program "PERIMA, PO-FESR 2007-2013"**

The research funded by the program is about the experimental behaviour of steel tube elements and connection systems under monotonic and cyclic flexure. The prediction of the experimental response of the steel tubes is obtained by generating numerical simulations with the non-linear finite element software Abaqus taking into account mechanical and geometrical non-linearities and the buckling effects.

January 2014 – January 2015 **Post-Doctoral Researcher**

at the University of Palermo, within the framework of the **national research program “ INTEP “Innovazione Tecnologica e di Processo per il settore manifatturiero (Technological and Process Innovation for the manufacturing industry)”**

The research aims at performing specific advanced tests devoted to the mechanical characterization of quasi-brittle materials carrying out cyclic triaxial compression tests as well as uniaxial compression tests, indirect tension tests and fatigue tests through the equipment for the execution of four point bending tests on prismatic specimens. The obtained results will be properly processed aiming at identifying the searched characteristic parameters and will be used for the implementation of constitutive laws within numerical finite element models in which also specific bond relationship at interface will be introduced in order to modeling the behavior of surfaces of different materials in contact. The finite element models are generated by means of the software Abaqus.

RESEARCH PROJECTS

January 2018 – October 2018

Member of the research team DICAM-RELUIS-DPC 2018

at **University of Palermo, Department of Civil, Environmental, Aerospace and Material Engineering (DICAM)**

Member of the research team within the project DICAM-RELUIS-DPC 2018 with the following tasks:

- RC structures;
- Innovative materials for existing applications;
- Dissemination and training

January 2017–December 2017

Member of the research team DICAM-RELUIS-DPC 2017

at **University of Palermo, Department of Civil, Environmental, Aerospace and Material Engineering (DICAM)**

Member of the research team within the project DICAM-RELUIS-DPC 2017 with the following tasks:

- task REINFORCED CONCRETE:
 - WP1 Vulnerability of RC structures on territorial scale
 - WP6 Seismic capacity of infilled frames and strengthening techniques
- Task INNOVATIVE MATERIALS FOR INTERVENTIONS ON EXISTING CONSTRUCTIONS:
 - WP2- Cement base matrix composites (FRCM)
- Task DISSEMINATION AND TRAINING

January 2016 - December 2016

Member of the research team DICAM-RELUIS-DPC 2016

at **University of Palermo, Department of Civil, Environmental, Aerospace and Material Engineering (DICAM)**

Member of the research team within the project DICAM-RELUIS-DPC 2016 with the following tasks:

- Researches on reinforced concrete structures, dissemination of results and training on seismic risk, catalog of the structural typologies of existing buildings, seismic behavior of infilled walls.

January 2015 - December 2015

Member of the research team DICAM-RELUIS-DPC 2015

at **University of Palermo, Department of Civil, Environmental, Aerospace and Material Engineering (DICAM)**

Member of the research team within the project DICAM-RELUIS-DPC 2015 with the following tasks :

- WP 1 – Seismic capacity of structural elements;
- WP 4 – Techniques/strategies of intervention;
- WP 6 – Vulnerability of RC structures on territorial scale;
- WP 1 dissemination of results and training on seismic risk ;
- Modeling of the seismic behavior of infilled walls.

July 2015 – in progress **Member of ReLUIIS Technical Section-Technical Management of Seismic Risk at ReLUIIS (Italian Network of the University Laboratories of Earthquake Engineering)**
 Membership to the Technical Section of ReLUIIS (the Italian Network of the University Laboratories of Earthquake Engineering), according to the Italian DPCM 8 July 2014 for the Technical Management of the Seismic Risk – post-earthquake seismic assessment of damage, since 14/07/2015.

EDITORIAL ROLES

from September 2018 **Associate Editor**
 Editorial Board Member (role of Associate Editor) for the peer-reviewed international journal of structural engineering **Frontiers in Built Environment - Section "Earthquake Engineering"** (open access) www.frontiersin.org

from March 2018 **Reviewer Editor**
 Editorial Board Member (role of Reviewer Editor) for the peer-reviewed international journal of structural engineering **Frontiers in Built Environment - Section "Computational Methods in Structural Engineering"** (open access) www.frontiersin.org

from January 2017 **Reviewer**
 Reviewer for peer-reviewed international journals on structural engineering:

- **Engineering Structures** Elsevier ISSN: 0141-0296
<https://www.journals.elsevier.com/engineering-structures>;
- **Journal of Structural Engineering ASCE** (United States), ISSN (print): 0733-9445; ISSN (online): 1943-541X; <http://ascelibrary.org/journal/jsendh>
- **Composites Part B: Engineering**. Elsevier; ISSN: 1359-8368;
<https://www.journals.elsevier.com/composites-part-b-engineering>
- **Steel and Composite Structures**. Techno Press; 1229-9367(Print), ISSN: 1598-6233(Online);
<http://www.techno-press.com/?journal=scs&subpage=7>
- **Frontiers in Built Environment – Section "Earthquake Engineering"** (open access)
www.frontiersin.org;
- **Frontiers in Built Environment – Section "Computational Methods in Structural Engineering"**
 (open access) www.frontiersin.org;
- **Structures**. Elsevier; ISSN: 2352-0124; <https://www.journals.elsevier.com/structures>;
- **The Open Civil Engineering Journal**. Bentham Open; ISSN: 1874-1495;
<https://benthamopen.com/tociej/>

TEACHING ACTIVITY

from A.Y. 2018/2019 **Teaching Assistant**
 of "**Morphology and concept of structures**", School of Architecture, Polytechnic of Turin (Italy)

from A.Y. 2016/2017 **Teaching Assistant**
 of "**Earthquake Engineering**" for Civil Engineering courses at the University of Palermo, Italy.

from A.Y. 2013/2014 **Teaching Assistant**
 of "**Design of Reinforced Concrete Structures**" for Civil Engineering courses at the University of Palermo, Italy.

from A.Y. 2013/2014 **Teaching Assistant**
 of "**Retrofitting of Historical Masonry Buildings**" for Civil Engineering courses at the University of Palermo, Italy.

A.Y. 2013/2014 – A.Y.2017/2018 **Member of the committee for final exams**
 of the courses "Design of Reinforced Concrete Structures", "Earthquake Engineering" and "Retrofitting of Historical Masonry Buildings" for Civil Engineering courses at the University of Palermo, Italy.

- A.Y. 2010/2011 – A.Y.2017/2018 **Co-advisor of Bachelor and Master degree theses**
Co-advisor of more than 15 Bachelor and Master degree theses for Civil Engineering courses at the University of Palermo, Italy
The main topics concern the design of reinforced concrete structures, masonry buildings, steel-concrete composite structural elements and reinforcing techniques by means of FRP devices.
- from 18th June to 24th July 2018 **Teaching activity for PhD course**
at **University of Palermo, Department of Civil, Environmental, Aerospace and Material Engineering (DICAM)**
Training course on “FEM modeling elements with Abaqus/CAE” for the PhD students in Civil, Environmental, Material Engineering of the University of Palermo. Total duration 21 hours corresponding to 3 academic training credits.
- from 6th June to 08th June 2018 **Teaching activity for PhD course**
at the **School of Science and Engineering - University of Dundee (UK)**
Training course entitled “Training course on Abaqus/CAE for basic users” for PhD students, research staff and academics of the School of Science and Engineering - University of Dundee (UK). Total duration 12 hours.
- A.Y. 2016-2017 **Teaching activity**
for the **Laboratory of “Restoration techniques on RC structures”** for Civil Engineering students, University of Palermo, Italy
The laboratory activity is focused on the finite element modelling techniques for structural elements by means of Abaqus.
- A.Y. 2015-2016 – A.Y. 2017/2018 **Teaching activity**
for the course **“Analysis and Design for the restoration of buildings”** for Civil Engineering students, University of Palermo, Italy
- A.Y. 2014-2015 – A.Y. 2017/2018 **Teaching activity**
for the course **“Earthquake engineering”** for Civil Engineering students, University of Palermo, Italy
- A.Y. 2013-2014 **Teaching activity**
for the **Laboratory of Reinforced Concrete Structures** for Civil Engineering and Architectural Engineering courses, University of Palermo, Italy
The laboratory activity is focused on the development of finite element models for the design of reinforced concrete framed structures. The finite element models are generated by means of the software SAP2000.
- A.Y. 2011-2012 – A.Y. 2017/2018 **Teaching activity**
for the course **“Design of Reinforced Concrete Structures”** for Civil Engineering students, University of Palermo, Italy
- A.Y. 2010-2011– A.Y. 2017/2018 **Teaching activity**
for the course **“Retrofitting of Historical Masonry Buildings”** for Civil Engineering students, University of Palermo, Italy
- May 2011 – June 2012 **Tutor for a second level Master degree**
for the **Project Work phase of the 2nd level Master degree in “Restoration and Retrofitting of Historical Buildings”**
Development of the analyses for the retrofitting of an historical masonry building.

CONFERENCE SPEAKER

- July 2018 26th International conference on Composites or Nano Engineering (ICCE-26)
Paris (France), 15-21 July 2018
"Numerical analysis of the effects of PBO-FRCM confinement on RC columns", Colajanni, P. & Monaco, A.
- June 2018 Italian Concrete Days 2018 (ICD 2018)
Lecco (Italy), 13-15 June 2018
"Comparative analysis of shear resisting models for hybrid steel trussed concrete beams", Monaco, A., Colajanni, P., La Mendola, L.
- June 2018 Italian Concrete Days 2018 (ICD 2018)
Lecco (Italy), 13-15 June 2018
"Analytical studies on the shear connection capacity of Hybrid Steel Trussed Beams", Rizzano, G., Latour, M., Monaco, A.
- June 2018 6th European Conference on Computational Mechanics (ECCM 6)
Glasgow (UK), 11-15 June 2018
"Computational assessment of the structural performance of concrete beams with encased steel joist", Ballarini, R., La Mendola, L., Le, J., Monaco, A.
- June 2018 School of Science and Engineering – University of Dundee
Dundee (UK) 08th June 2018
Speaker at the School of Science and Engineering – University of Dundee for PhD students, research staff and academics. Presentation of the research entitled "FE modelling of concrete beams with encased steel joist"
- October 2016 International Workshop on Multiscale Innovative Materials and Structures (MIMS16)
Cetara, Salerno (Italy), 28-30 October 2016
"Finite element analysis of the out-of-plane behavior of FRP strengthened masonry panels", Monaco, A., Minafò, G., Cucchiara, C., D'Anna, J., La Mendola, L.
- October 2015 XXV CTA congress on steel structures
Salerno (Italy), 1-3 October 2015
"Evaluation of the shear connection strength of precast hybrid steel-trussed-concrete composite beams", Latour, M., Monaco, A., Rizzano, G.
- October 2015 XXV CTA congress on steel structures
Salerno (Italy), 1-3 October 2015
"Finite element modeling of the shear behavior of hybrid steel trussed concrete beams", Colajanni, P., La Mendola, L., Monaco, A.
- June 2015 2nd International Symposium on Advances in Civil and infrastructure Engineering – ACE,
Vietri sul Mare (Italy), 12-13 June 2015
"Validation of a shear model for RC and hybrid beams with two different inclinations of transversal reinforcement", Colajanni, P., La Mendola, L., Monaco, A., Recupero, A.
- April 2015 Ordine degli Ingegneri della provincia di Trapani (Professional Order of Engineers in Trapani – Italy)
Trapani (Italy), 24 April 2015
"Criteri di progetto e analisi di Travi prefabbricate reticolari miste (Design criteria and analysis of hybrid steel trussed concrete beams)", Monaco A.
- November 2014 20th C.T.E. Congress
Milan (Italy), 6-8 November 2014
"Analisi teorico-sperimentale del comportamento a taglio di travi prefabbricate reticolari miste. (Experimental and theoretical analysis of the shear behavior of hybrid steel trussed-

- concrete beams).", Colajanni, P., La Mendola, L., and Monaco, A.
- September 2013 **Fall 2013 CE 8400 Structural Seminar Series at the Department of Civil Engineering, University of Minnesota, USA**
Minneapolis 27 September 2013
"Slender concrete beam reinforced with steel space truss for earthquake applications in Italy", Monaco A.
- July 2013 **15th ANIDIS congress of Seismic Engineering in Italy**
Padua, Italy 30 June - 4 July 2013
"Assessment of push-out test response of hybrid steel trussed-concrete beams by FE model", Colajanni, P., La Mendola, L., Monaco, A., Latour, M., and Rizzano, G.
- November 2012 **19th C.T.E. Congress**
Bologna, Italy 8-10 November 2012
"Analisi sperimentale del comportamento ciclico di nodi di travi SER e pilastri in c.a. (Experimental analysis of the cyclic behavior of SER beam-to-R.C. column joints).", Colajanni, P., La Mendola, L., and Monaco, A.

CONFERENCE SPECIAL SESSION ORGANIZER

Italian Concrete Days 2018 (ICD 2018) - Lecco (Italy), 13-15 June 2018

Organizer of a special session titled "Researches and developments on the use of Prefabricated Hybrid Trussed Beams" at the conference "Italian Concrete Days 2018" (ICD 2018) - Lecco (Italy), 13-15 June 2018.

PARTECIPATION TO CONFERENCES, SEMINARS AND WORKSHOP

- June 2015 **Participation to the "OpenSees Days – Italy"**
at the University of Salerno, Fisciano (SA), Italy, 10-11/06/2015.
- October 2013 **Participation to seminar**
"Shear Yielding Strength for Welded Lap Splice Connections", Prof. Mark Bowman, School of Civil Engineering of Purdue University, Indiana (USA), 15/10/2013, Department of Civil Engineering, University of Minnesota, Minneapolis (USA)
- October 2013 **Participation to seminar**
"Fatigue Crack Growth in Rocks", Prof. Jialiang Le, Department of Civil Engineering, University of Minnesota (USA), 11/10/2013, Department of Civil Engineering, University of Minnesota, (USA)
- September 2013 **Participation to the International conference "SIMULIA Regional User Meetings"**
24-25/09/2013, Minneapolis (USA) on the following topic "How the latest simulation technology and methods can accelerate and improve product development. This meeting brings together users to share their knowledge and experience in advancing methods and technology for finite element analysis, multiphysics, process automation, design optimization and simulation management"
- September 2013 **Participation to seminar**
"Wireless Active Control of Civil Structures", Prof. Lauren Linderman, Department of Civil Engineering, University of Minnesota (USA), 20/09/2013, Department of Civil Engineering, University of Minnesota, Minneapolis (USA)
- May 2013 **Participation to workshop**
"La Gestione Tecnica dell'emergenza Sismica - Rilievo del Danno e Valutazione dell'Agibilità post-sisma (post-earthquake seismic assessment of damage)", 21/05//2013 at the

Dipartimento della Protezione Civile, Rome, Italy

April 2013 **Participation to workshop**

"La Gestione Tecnica dell'emergenza Sismica - Rilievo del Danno e Valutazione dell' Agibilità post-sisma (post-earthquake seismic assessment of damage)", 8-9/04/2013 at the Dipartimento della Protezione Civile, Rome, Italy

COURSES ATTENDED

September 2017 **Course "Training course of BIM design"**

with exam, e-learning promoted by Beta Formazione Srl (Ente n° 8124, accreditato alla Regione Emilia-Romagna, V. Piratello, 66/68 - 48022 Lugo (RA) - www.betaformazione.com, Cod.Fisc. - P.Iva - iscr. Reg. Imp. 02322490398).

Main topics: Revit architecture module; Revit Structure module; introduction to Robot Structural Analysis

May 2013 **Course of "Fracture of Materials and Structures"**

hold by Prof. Roberto Ballarini, James L. Record Professor del Department of Civil Engineering, della University of Minnesota, 17-30 May 2013 at the Department of Civil, Environmental, Aerospace and Material Engineering of the University of Palermo.

May 2012 **Course of Timber Engineering**

hold by Prof. Massimo Fragiacommo at the Department of Civil Engineering, University of Salerno (Italy) on 21-23/05/2012.

September 2011 **Course of MATLAB – PART 2**

with exam, attended at the University of Palermo on 05-09/09/2011.

September 2011 **Course of MATLAB – PART 1**

with exam, attended at the University of Palermo on 28/08/2011-02/09/2011.

July 2011 **Course of "Meshfree Kernel-Based Approximation Methods for Engineering Applications with MATLAB"**

by Prof. Gregory Fasshauer, Illinois Institute of Technology, Chicago, 04-08/07/2011 at the University of Palermo .

March 2011 **Course "DRHOUSE Project"**

by Presidenza del Consiglio . dei Ministri-Dipartimento della Protezione Civile - Ufficio Rischio Sismico e Vulcanico. The main topic is the post-earthquake seismic assessment of damage with practical exercise on field.

PROFESSIONAL ACTIVITY

May 2015 – July 2015 **Post-doc stage activity**

at **HSG SRL INDUSTRY**, Contrada Pietra di Roma - 98070 Torrenova (ME), Italy

HSG SRL is an industry for the design and **production of prefabricated steel elements for composite steel-concrete constructions**. The stage activity aimed at developing an experimental and theoretical research on the cyclic behaviour of joints in framed seismic structures made up of reinforced concrete column cast in place and semi-prefabricated hybrid steel-concrete beams. The finite element models of the system beam-to-column joint are generated by means of the software **Abaqus** for the academic diffusion of the results among the scientific community.

October 2016 - October 2017 **Collaboration as external expert engineer**

at **Arch. Antonio Giovannelli**, Piazza Casa Professa n.2, 90100 Palermo (Italy)

Design activities for the restauration of buildings in hystorical centers in the municipatitily of Palermo (Italy):

- "Palazzo Arezzo", piazzetta Marchese Arezzo n. 5 Palermo;
- Building in Vicolo Dadi n.13 Palermo;

- Building in Vicolo Ragusi n.2 Palermo;
- Building in Corso Albergo Amedeo- Piazza Luigi La Porta.

- November 2016-December 2016 **Employment contract**
at **MEDIACOM S.r.l.** via Cavour n. 28, 91025 Marsala (TP), P.IVA 02012740813
Walk-in activities at "Area Cavo PAL_02_03_W" in Palermo, for installation of optical fiber network within the national program "Enel Open Fiber".
- February 2013 **Collaboration as external expert engineer**
at **Arch. Nicolò Campanella Office**, Via Cavour, 28 - 91025 - Marsala (TP) (Italy)
Executive design for the installation of mobile radio stations in the town of Mondello (PA); customer **Telecom Italia**. Structural design of steel tube for the installation of antenna-dishes with realization of plinth of base and calculation of metal connections.
- February 2012-December 2012 **Collaboration as external expert engineer**
at **Arch. Nicolò Campanella Office**, Via Cavour, 28 - 91025 - Marsala (TP) (Italy)
Preliminary draft project for the installation of mobile radio stations in the town of Sferracavallo (PA) e Mondello (PA); customer **Telecom Italia**.
- April 2012 **Collaboration as external expert engineer**
at **Arch. Giuseppe Barraco Office**, Via Struppa Francesco, 45 - 91025 Marsala (TP) (Italy)
Structural design of new construction R.C. residential building, constituted by a ground floor and not accessible loft with external timber cantilever roof, located in C.da Ranna – Marsala (TP) (Italy).
- January 2010-December 2010 **Collaboration as external expert engineer**
at **Arch. Nicolò Campanella Office**, Via Cavour, 28 - 91025 - Marsala (TP) (Italy)
The main activities are in the field of structural design, acoustics and electromagnetics. In particular, the activities conducted were the structural calculation of R.C. buildings and the design of placement of video surveillance systems of several municipalities. In particular, the following projects have been developed:
 - Structural design of new construction R.C. residential building, constituted by three elevations and one basement, located in C.da Cardilla – Marsala (TP) (Italy);
 - Preliminary draft project for the realization of video surveillance systems in the towns of **Castellammare del Golfo (TP)** and **Palermo**, Customer **The Italian Ministry of Interior-Department of Public Security**, project realized for **SELEX COMMUNICATIONS**.
- A.Y. 2007-2008 **Security Coordinator for Design and Realization Phase**
Certification of **equivalence to the qualifying course of Security Coordinator for Design and Realization Phase (Annex V of D.Legs. 14/08/1996 n. 494)**.
Attendance of the Course of Management of the Construction Site and course of Security Coordinator, certificated by the Engineering School as equivalent to the training course for Security Coordinator for Design and Realization Phase according to Annex V of D.Legs. 494/96.

AWARDS

- October 2016 **6th C.T.E. AWARD**
for the research paper entitled "Experimental and theoretical analysis of the shear behavior of hybrid steel trussed concrete beams" published in the proceedings of the 20th C.T.E. Italian Congress, 6-7-8 November 2014, Milan (Italy). The award was assigned on October 28th 2016 in Rome during the Italian Concrete Days with the following motivation: "
per la memoria dal titolo "Analisi teorico-sperimentale del comportamento a taglio di travi prefabbricate reticolari miste" degli Atti del 20° Congresso C.T.E., 6-7-8- novembre 2014,

Milano. Il premio è stato conferito in data 28 ottobre 2016 a Roma in occasione degli Italian Concrete Days con la seguente motivazione: "The experimental accuracy and precise validation are appreciated for the resulting calculation models proposed for the practical design applications on a subject of obvious interest for the building industrialization".

September 2014

Participation to "PhD Students Award 2014 - Innovation in Concrete Structures and Cementitious Materials" promoted by ACI Italy Chapter

In order to disseminate the research activities developed by the young Italian students, **ACI Italy Chapter** established for the year 2014 in partnership with **Federbeton**, a prize to be awarded to doctoral thesis concerning studies of innovation in the field of RC and PRC structures and cement-based materials. The thesis received the following evaluation:

Dr. Alessia Monaco's thesis concerns the topical subject in the field of design of hybrid or composite beams made of a steel frame embedded in concrete. The combination of experimentation and finite element modeling made it possible to study both the local mechanisms of transfer of the stresses, the global behavior, which takes concrete-steel coupling advantage for both the stiffness and bearing capacity, the ductility and the maintenance of the bearing capacity in the post-peak phase. **The study is completed by a survey on the size effect and the beam-to-column connections in the presence of cyclic loading. The thesis has its strengths in combining numerical and experimental investigation with implications in the design process. For these reasons, it was indicated by the Commissioners (Proff. Liberato Ferrara, Pietro Gambarova, Ezio Giuriani, Paolo Riva and Franco Mola), as deserving of special attention (in order of merit), resulting within the 50% of the theses of major interest.**

PUBLICATIONS

International Journals

- [1] Colajanni, P., La Mendola, L., **Monaco, A.** (2018). "Review of Push-Out and Shear Response of Hybrid Steel-Trussed Concrete Beams", *Buildings*, 8(10), art. n. 134, doi:10.3390/buildings8100134.
- [2] Minafò, G., **Monaco, A.**, D'Anna, J., La Mendola, L. (2018). "Compressive behaviour of eccentrically loaded slender masonry columns confined by FRP", *Eng. Struct.*, 172, 214-227.
- [3] Campione, G., Cannella, F., Cavaleri, L., **Monaco, A.** (2018). "Simplified analytical model for flexural response of external R.C. frames with smooth rebars", *Structural Engineering and Mechanics*, 66(4), 531-542, DOI: <https://doi.org/10.12989/sem.2018.66.4.531>.
- [4] Colajanni, P., La Mendola, L., and **Monaco, A.** (2018). "Stress transfer and failure mechanisms in steel-concrete trussed beams: Experimental investigation on slab-thick and full-thick beams", *Constr. Build. Mater.* 161(1), 267-281, <https://doi.org/10.1016/j.conbuildmat.2017.11.134>.
- [5] Minafò, G., Cucchiara, C., **Monaco, A.**, La Mendola, L. (2017). "Effect of FRP strengthening on the flexural behaviour of calcarenite masonry walls", *Bulletin of Earthquake Engineering*, 15(9), pp. 3777-3795; doi:10.1007/s10518-017-0112-z.
- [6] Ballarini, R., La Mendola, L., Le, J., and **Monaco, A.** (2017). "A computational study of failure of hybrid steel trussed concrete beams", *J. Struct. Eng.* ASCE, 143(8), article number 04017060, DOI: 10.1061/(ASCE)ST.1943-541X.0001792.
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