CARLO ANDREA CASTIGLIONI

- Born in Milano, 28th, July, 1956, graduated in Civil Engineering from Politecnico di Milano in 1980. Professional Engineer from 1981, PhD in Civil and Environmental Engineering at the University of Genova.

ACADEMIC CAREER

- Since 1983, Assistant Professor at the Structural Engineering Dept. of Politecnico di Milano.
- In 1984, Technical Secretary of the Structural Stability Research Council (S.S.R.C.), at Fritz Engineering Laboratory, LEHIGH University.
- Since 1992, Associate Professor of Civil Engineering at the School of Architecture at "La Sapienza" University in Roma.
- Since 1993, Associate Professor of Civil Engineering at the School of Engineering at Politecnico di Milano.
- Since 1996, Associate Professor of Structural Design at the School of Architecture at Politecnico di Milano.
- Since 2002 Full Professor of Structural Design at the School of Architecture at Politecnico di Milano
- Since 2015 Professor of Structural Design at the School of Architecture, Urban Planning and Civil Engineering at Politecnico di Milano

NATIONAL AND INTERNATIONAL SCIENTIFIC ACTIVITIES

- Member of the International Association for Bridge and Structural Engineering (I.A.B.S.E.), of Collegio dei Tecnici dell'Acciaio (C.T.A.) and of Fritz Engineering Research Society (F.E.R.S.)

- In 1984, worked at Fritz Engineering Laboratory, LEHIGH University, in cooperation with Prof. J.W. Fisher and Prof. B.T. Yen on fatigue and fracture of steel bridges and served as Technical Secretary of the Structural Stability Research Council (S.S.R.C.), at Fritz Engineering Laboratory, LEHIGH University.

- Technical Secretary of the Italian Commission for the Study of Recommendations for Steel Structures of C.N.R. in the period 1990-1998

- Member of the Board of Directors of C.I.R.A. (Italian Centre for Aerospace Research) from 1995 to 1999, nominated by the President of the Italian Republic as Representative of the Italian Ministry of University and Research, during the phase of construction of the 350 Million Euros testing facilities, sponsored by both the Italian Ministry of Research, by the Italian Space Agency (ASI) and by the European Space Agency (ESA).

- Member of the Ministerial Drafting Panel for the Italian Technical Building Code, Coordinator of the W.G. for Steel and Composite Constructions (2011-2014) and of the WG "Racking Systems" at C.S.LL.PP (2014 – 2018 ongoing)

- Invited to give Seminars in the following Schools:

  Purdue University, West Lafayette, Indiana, USA, 1987.
  University of California Berkeley, USA, 1987, 1989 and 1995.
  I.C.O.M. Ecole Politecnique Federal Lausanne, CH, 1988 and 1990.
  Stanford University, USA, 1989 and 1995.
  Cornell University, USA, 1989.
  Texas A.&M. University, USA, 1989.
  NASA Langley Research Center, USA, 1989.
  Instituto Superior Tecnico, Lisbon, Portugal, 1992, 1994, 1999-2018 yearly
  Universidade de Sao Paulo, Sao Carlos, Brasil, 1996, 1999, 2008
  University of Minnesota, Minneapolis, USA, 1997
  Lehigh University, Bethlehem, Pennsylvania, USA, 1997
  National technical University, Athens, Greece, 2004-2018 yearly
  12th July University, Izmir, Turkey, 2006-2016 yearly

TEACHING EXPERIENCE

- Teaching *"Theory of elasticity"* and *"Theory of structures"* at the School of Engineering of Politecnico di Milano (1981-1992)
- Teaching *"Structural Steel Design"* at University of Brescia (1988 - 1992)
- Teaching *"Structural Design"* at the School of Architecture of University of Roma "La Sapienza" (1992-1994)
- Teaching *"Computer Structural Analysis"* at the School of Engineering of Politecnico di Milano (1993-1995)
- Teaching *"Theory of elasticity"* and *"Theory of structures"* and *"Structural Design"* at the School of Architecture of Politecnico di Milano (1996-2002)
- Teaching *"Structural Steel Design"* to the PhD students of the School of Engineering of Politecnico di Milano (1998-2004)
- Teaching *"Architecture of Steel Structures"* to both undergraduate and graduate students of the 2nd School of Architecture of Politecnico di Milano (2002-2015) - Course officially taught in English since a.y. 2013/14
- Teaching *"Structural Design"* to the graduate students of the 2nd School of Architecture of Politecnico di Milano (2002-2015)
- Teaching *"Structural Steel Design"* to the graduate students of the School of Mechanical Engineering of Politecnico di Milano (2005-2010)
- Teaching *"Architecture of Steel Structures"* to graduate students of the School of Architecture, Urban Planning and Civil Engineering of Politecnico di Milano (2015-2017) - Course officially taught in English
- Teaching *"Design of Structures"* to graduate students of the School of Architecture, Urban Planning and Civil Engineering of Politecnico di Milano (2015-2018) - Course officially taught in English

RESEARCH ACTIVITY

His research activity concerns with a number of topics strictly connected with structural engineering, such as stability of structural members, fatigue and fracture, seismic behaviour of steel structures, with particular reference to damage and strength deterioration. His research works, can be divided in the following groups:

A) Load carrying capacity of structural elements and connections

B) High-cycle fatigue

B1) Fatigue and fracture in steel bridges
B2) Fatigue and fracture in cold formed steel structural details
B3) Application of fracture mechanics concepts to the study of crack propagation in structural details

C) Behaviour of steel structures in seismic regions

C1) Damage models and failure criteria for low-cycle fatigue
C2) Experimental study and numerical modelling of beams and beam-columns
C3) Experimental study and numerical modelling of bolted and welded connections
C4) Methods for the assessment of the q-factor
C5) Design approach for steel structures in seismic areas
C6) Dissipative devices for Seismic Resistant Steel Structures
C7) Seismic Behaviour of Steel Storage Racking Systems

D) Structural applications of fibre reinforced plastic materials

E) Structural damage

E1) Damage assessment in steel structures under high and or low-cycle fatigue
E2) Damage assessment in bridges by modal survey and system identification techniques

F) Seismic base isolation systems

G) Codes

He is author or co-author of more than 230 technical papers in the field of civil engineering.

RESEARCH EXPERIENCE

After spending 1984 as Visiting Professor at Lehigh University, co-operating with Prof. J.W. Fisher in the field of fatigue and fracture, Prof. Carlo Castiglioni has been active since 1985 in research projects related to cyclic and seismic behaviour of steel structures, within a research team at the Structural Engineering Dept. of Politecnico di Milano including, among the others, Prof. Giulio Ballio, Prof. Leo Finzi.

His activity, concerning both testing and numerical modelling, lead to the publication of more than 60 papers on this topic, including presentations to international Conferences and Symposiums.
In particular, the testing research activity was aimed to the study of both rigid and semi-rigid behaviour of beam-to-column connections. More than 60 full scale tests were performed in the Laboratory of the Structural Engineering Dept. of Politecnico di Milano on such details. Globally, considering rigid and semi-rigid connections of various typologies as well as members, more than 100 full scale tests were performed, whose results are available on request.

Furthermore, Prof. Castiglioni has been active in modelling the cyclic behaviour of steel members and connections, as well as on the seismic design of steel structures in seismic areas.

Recently his attention focused on the seismic behaviour of steel storage racking systems and on base isolation techniques for both buildings and monuments.

In the U.S., he is in contact with U.C. Berkeley (prof. Astaneh), Georgia Tech (prof. Leon) and University of Huston (prof. Elnashai).

In Europe he is in contact with NTUA Athens (prof. Carydis and prof. Vayas), ULiege (prof. Plumier), UHasselt (prof. Degee), IST Lisbon (prof. Calado), RWTH Aachen (prof. Hoffmeister), Dokuz Eylul University Izmir (prof. Aktuglu, prof. Orbay).

RESEARCH REFERENCES

Prof. Castiglioni is and has been active in many national and international research programs.
He successfully managed and implemented many relevant EU-funded projects with the production of high quality deliverables. Hereafter a short list is presented:

- Team leader: EU projects "Seismic Behaviour of Composite Steel-Concrete Frames" within the research programs ECOLEADER (1998) and ECOLEADER2 (2001) for free access to Large Testing Facilities, (shaking table tests at National Technical University of Athens)
- Team leader: Italian Ministry of University and Research projects "Damage in steel and composite constructions", (2000-01), (2002-03), (2004-05).
- Team leader: EU-RFCS Research Project INERD - Innovation for Earthquake Resistant Design, (2001-03)
- Scientific Coordinator: EU-RFCS Research Project SEISRACKS (Seismic Behaviour of Steel Storage Pallet Racking Systems), administratively coordinated by ACAI, (2005-07), (768,000 €)
- Team leader: EU-RFCS Research Project FUSEIS (Dissipative Fuses for Seismic Resistant Steel Frames), coordinated by National Technical University of Athens, (2008-11) (741,000 €)
- Coordinator: UE-RFCS Research Project SEISRACKS2 (Seismic Behaviour of Steel Storage Pallet Racking Systems) (2011-14), (1,442,000 €)
- Team leader: UE-RFCS Research Project ADBLAST (Advanced Design Methods for Blast Loaded Steel Structures), Coordinated by RWTH-Aachen (2010-13), (1,365,000 €)
- Team leader: UE-RFCS Research Project MEAKADO (Design of Steel Structures with Limited Ductility Requirements for Optimized Performances in Moderate Earthquake Areas), coordinated by University of Liege (2013-16), (1,307,000 €)
- Team leader: UE-RFCS Research Project PROINDUSTRY (Seismic Protection of Industrial Plants by Enhanced Steel Based Systems), coordinated by University of Pisa (2013-16), (1,568,000 €)
- Coordinator: UE-RFCS Research Project LASTEICON (Laser technology for innovative connections in steel constructions) (2016-19), (1,927,670 €)
- Team leader: UE-RFCS Research Project INNOSEIS (Valorisation of Innovative Anti-seismic Devices), coordinated by National Technical University of Athens (2016-17), (995,700 €)

- Coordinator: UE-RFCS Research Project FASTCOLD (Fatigue Strength of Cold-Formed Structural Steel Details) (2017-20), (2,893,000 €)
- Team leader: UE-RFCS Research Project STEELWAR (Advanced Structural Solutions for Automated Steel Rack Supported Warehouses), coordinated by University of Pisa (2017-21), (2,455,500 €)
- Coordinator: UE-RFCS Research Project DISSIPABLE (Fully Dissipative and Easily Repairable Devices for Resilient buildings with Composite Steel-Concrete Structures) (2018-21), (1,814,811 €)

LABORATORY ACTIVITY

Design of the reaction frame for large scale fatigue testing and for large scale cyclic quasi-static testing of the Laboratory of Testing and Materials (LPM) of Politecnico di Milano,

Testing and result re-analysis procedures as well as certification of components for telephonic applications (FRP Poles, manhole covers, antennas supports, shelters).

Performed a number of shaking table tests on large scale specimens, at the Laboratory for Earthquake Engineering of the National Technical University in Athens

Full scale testing and component testing of racking systems at Laboratory of Testing and Materials (LPM) of Politecnico di Milano .

PROFESSIONAL ACTIVITY

In addition to the academic career, Carlo Castiglioni has a regular professional activity mainly related to:

- Design of steel and/or reinforced concrete structures.
- Final testing of steel and/or reinforced concrete structures
- Structural design for strengthening and preserving existing buildings, historical buildings and monuments.
- Consulting on problems such as fatigue&fracture, seismic behaviour of structures, structural damage, fire resistance.
- Design of steel transmission towers.
- Finite elements stress analysis.
- Due diligence, quality assurance and quality control

Presently he is shareholder and Technical Director of Fincon Cosulting Italia s.r.l. (www.finconitalia.it) as well as Technical Director of 1.618 Engineers and Architects srl (www.1618ea.com).

Since May, 2015, his professional experience has been attested “Qing” by the Ordine degli Ingegneri of Milan, in the second level “structures” of design, construction supervision, testing and consulting for steel, reinforced concrete, composite steel-concrete and masonry structures.

QA/QC ACTIVITY

Carlo Castiglioni is Inspector of ACCREDIA/SINAL, the Italian National System for the Evaluation and Qualification of the Competence of Testing and Calibration Laboratories, according to ISO 17025.

Validation of Projects/Due Diligence

- In 2000 member of the Committee of Municipality of Milano for Evaluation of Projects for Underground Parking Lots.
- In 2006, member of the Independent Assessment Team, in the audit held at KBR (Huston, Texas) and at SNAM Progetti (Milano, Italy) related to the "Escravos Gas To Liquid (EGTL)" (total budget 1.7 billion US$ under construction at Escravos (Nigeria) on behalf of Chevron Oil Company.
- In 2010-2011 member of the Independent Assessment Team for the validation of the intermediate design of the Messina Narrows Bridge, on behalf of ITALCERTIFER
- In 2014, due diligence for an InterIKEA Shopping Centre in Italy (total amount of works to be examined nearly 8 M US$)

DAMAGE ASSESSMENT ACTIVITY

In addition, Carlo Castiglioni has a long experience in damage survey and assessment, both in bridges (for fatigue damage) and in buildings (for natural disasters damage).

Hereafter, a short list of examples is given.

Inspections of Steel Bridges for Fatigue Damage:

- Beaver Creek Bridge, Pennsylvania, USA
- Canoe Creek Bridge, Pennsylvania, USA
- Luling Bridge, New Orleans, Luisiana, USA
- Ferrari-Don Sturzo Bridge, Milan, Italy
- Viale Serra Bridge, Milan, Italy
- Barmes Bridge, Valle D'Aosta, Italy

Post Earthquake Building Survey and Damage Assessment:

- Emilia Romagna – Italy – (May, 2012)
- Van – Turkey – (October, 2011)
- Haiti – (January, 2010)
- L'Aquila Earthquake – Italy – (April, 2009)
- Izmit – Turkey – (August, 1999)
- Athens – Greece – (September, 1999)
- Umbria – Italy – (September, 1997)

INTERNATIONAL CONTACTS & PROFESSIONAL ACTIVITIES

During his 35 years long career Carlo Castiglioni developed a network of worldwide contacts, among which, the following are worthwhile being mentioned:

- ***U.S.A.*** – Thanks to his period as Visiting Faculty at Lehigh University, he could develop a number of contacts with Faculties of many different Universities, such as U.C. Berkeley, U.C. SanDiego, GeorgiaTech, PennState, Cornell, Texas A&M, S.U.N.Y. Buffalo.
- ***Portugal and Brasil*** – Since 1995 he is in close contact with Instituto Superior Technico in Lisbon as well as with the University of Sao Paulo/Sao Carlos, cooperating in research activities on the design of steel structures as well as with Portuguese Design and Construction Companies.

- ***Turkey*** – Since 2006, he is in contact with Dokuz Eilul University in Izmir and with ITU and Bogazici University in Istanbul. He performed design and consulting activities on behalf of Turkish Construction Companies,
- ***Greece and Cyprus*** – Since 1997, he has developed a strong cooperation with the National Technical University in Athens, in particular with the Seismic Engineering Laboratory and the Laboratory of Steel Structures. He has taken part to a number of projects during the construction of the facilities for the 2004 Olympic Games, cooperating with the Design Office of Prof P. Carydis. Thanks to fluency in the Greek language, he is still actively cooperating with Companies and Universities in Greece and Cyprus.

List of Publications

1) "**Analisi a collasso in presenza di instabilita' di strutture reticolari spaziali**", C.A.Castiglioni, R.Contro, R.Zandonini, A.Zavelani-Rossi, VIII Convegno C.T.A., Giornate Italiane della Costruzione in acciaio, Palermo, Ottobre 1981, pag. 159-176.
2) "**Aste compresse con sezione e carico assiale variabili**", C..A.Castiglioni, C.Urbano, R.Zandonini, VIII Convegno C.T.A., Giornate Italiane della Costruzione in acciaio, Palermo, Ottobre 1981, pag. 177-183.
3) "**Un metodo numerico per simulare il comportamento statico e dinamico di strutture metalliche soggette a fenomeni di instabilità**", C.A.Castiglioni, Technical Report n. 1/82, Dipartimento di Ingegneria Strutturale, Politecnico di Milano.
4) "**Ultimate load carrying capacity of steel members under stepwise axial and transversal loads**", C.A.Castiglioni, F.Genna, R.Zandonini, Costruzioni Metalliche, n.4, 1982
5) "**Stato limite ultimo di instabilita' di telai in C.A. ad un piano: osservazioni generali, metodo di calcolo proposto ed esame delle variazioni di parametri caratteristici**", C.A.Castiglioni, I.Iori, R.Zandonini, Convegno C.T.E., Verona, Novembre 1982, pag. c39-c49.
6) "**On the Ultimate Strength of light Mill-Building Columns**", C.A.Castiglioni, R.Zandonini, Proceedings of the Third International Colloquium on the Stability of Metal Structures, George Winter Memorial Session, Toronto, May 1983, pag. 347-368.
7) "**Buckling of Steel Structures: a Numerical Simulation**", C.A.Castiglioni, Proceedings of the 5th Engineering Mechanics Division Speciality Conference, A.S.C.E., Laramie, WY, August 1984, pag. 1519-1522.
8) "**Stepped Columns: a Simplified Design Method**", C.A.Castiglioni, American Institute of Steel Construction, AISC, Engineering Journal, 1st. quarter 1986, pag. 1-8.
9) "**Capacità portante di colonne rastremate in acciaio**", C.A.Castiglioni, R.Zandonini, Rendiconti dell'Istituto Lombardo di Scienze e Lettere, vol. 116 (1982), Milano, 1985.
10) "**Forces and Displacements of Diaphragm Members in Multigirder Steel Bridges**", J.J.Lee, C.A.Castiglioni, B.T.Yen, J.W.Fisher, Proceedings of the 2nd International Bridge Conference, Pittsburgh, PA, June 1985.
11) "**Analisi sperimentale e simulazione numerica di un ponte a travata soggetto a fenomeni di fatica**" C.A. Castiglioni, X Convegno C.T.A., Giornate Italiane della Costruzione in acciaio, Montecatini, Ottobre 1985, pag.137-148.
12) "**Displacement Induced Stresses in Multigirder Steel Bridges**", J.J. Lee, C.A.Castiglioni, J.W.Fisher, C.N.Kostem, B.T.Yen, Technical Report 500-1, October 1985, Fritz Lab. Lehigh University.
13) "**Field Analysis of Fatigue Damage in Two Steel Bridges**", C.A.Castiglioni, J.W.Fisher, J.J.Lee, B.T.Yen, Costruzioni Metalliche n.4, 1986.
14) "**Fatigue cracking in multigirder steel bridges: effects of web thickness on local stresses and out-of-plane displacements in web gaps**", C.A.Castiglioni, Costruzioni Metalliche n.1, 1987.
15) "**Evaluation of Fatigue Cracking at Cross Diaphragms of a Multigirder Steel Bridge**", C.A.Castiglioni, J.W.Fisher, B.T.Yen, Journal of Constructional Steel Research, Vol.9, n.2, 1988, pag. 95-110.

16) "**Effects of Out-of-plane Displacements and Web Gap Dimension on the Fatigue Life of Stiffener Details in a Multigirder Skewed Steel Bridge**", C.A.Castiglioni, B.T.Yen, J.W.Fisher, Fritz Lab., Rept. n.507-7, Lehigh University, Dicembre 1988.

17) "**Numerical simulation of steel shapes under cyclic bending: effect of the constitutive law of the material**", C.A.Castiglioni, Costruzioni Metalliche n. 3, 1987.

18) "**L'influenza del legame costitutivo nella modellazione numerica di sezioni inflesse in acciaio soggette a carichi ciclici**", C.A.Castiglioni, XI Convegno C.T.A., Giornate italiane della costruzione in acciaio, Trieste, Ottobre 1987, pag. 185-202.

19) "**Modellazione numerica di sezioni inflesse in acciaio soggette a carichi ciclici**", C.A.Castiglioni, III Convegno Nazionale "L'Ingegneria Sismica in Italia", Roma, Ott. 1987, pag. 211-222.

20) "**Valutazione del coefficiente di struttura per alcune tipologie strutturali in acciaio**", G.Ballio, C.A.Castiglioni, F.Perotti, III Convegno Nazionale "L'Ingegneria Sismica in Italia", Roma, Ott. 1987, pag 703-714.

21) "**Steel members under cyclic loading: numerical modelling and experimental verifications**", C.A.Castiglioni, N.DiPalma, Costruzioni Metalliche, n.6, 1988.

22) "**On the Assessment of Structural Design Factors for Steel Structures**", G.Ballio, C.A.Castiglioni, F.Perotti, IX World Conference on Earthquake Engineering, Tokyo, August 1988, vol. V, pag.1167-1172.

23) "**Numerical Models for Simulating the Cyclic Behavior and the Seismic Response of Steel Structures**", G.Ballio, C.A.Castiglioni, F.Perotti, IX World Conference on Earthquake Engineering, Tokyo, August 1988, vol. IV, pag.231-236.

24) "**Colonne pressoinflesse in acciaio soggette ad azioni sismiche: Comportamento non lineare e coefficienti di progetto**", C.A.Castiglioni, F. Perotti, S. Rossi, Atti del XII Convegno CTA, Capri, Ottobre 1989, vol. I, pag. 339-350.

25) "**Experimental behaviour of steel members under cyclic bending**", C.A.Castiglioni, N.DiPalma, Costruzioni Metalliche n.2/3, 1989.

26) "**A trilinear constitutive model for the seismic analysis of steel structures**", C.A. Castiglioni, N. DiPalma, E. Moretta, Costruzioni Metalliche, n.2, 1990.

27) "**Sulla applicabilita' della regola di Miner nella fatica a basso numero di cicli**", C.A. Castiglioni, G. Goss, Technical Report n. 8/89, Dipartimento di Ingegneria Strutturale, Politecnico di Milano.

28) "**Modellazione del comportamento dinamico non lineare di telai in acciaio soggetti ad azioni sismiche**", C.A. Castiglioni, M.G. Mulas, E. Moretta, Atti del XII Convegno CTA, Capri, Ottobre 1989, vol. I, pag. 351-362.

29) "**Un modello stocastico di propagazione di cricche per fatica in dettagli strutturali in acciaio**", C.A. Castiglioni, S. Rossi, Atti del XII Convegno CTA, Capri, Ottobre 1989, vol. I, pag. 327-338.

30) "**Considerations on some recent Recommendations for the fatigue design of steel structures**", C.A.Castiglioni, Costruzioni Metalliche, n.1, 1988, pag. 9-30.

31) "**An analysis of Fatigue Recommendations considering new-data**", I.F.C. Smith, C.A.Castiglioni, P.B.Keating, I.A.B.S.E. Periodica, P-137/89, vol. 13, n. 3/89.

32) "**Generation of Artificial Accelerograms for Assessing q Factors**", G.Ballio, C.A.Castiglioni, F.Perotti, R.Zandonini, Internal Report T.C.3, "Safety and Loadings", W.G.1.3, "Seismic Design", E.C.C.S.

33) "**Fire Effects on the Stability of Plate Girders**", C.A.Castiglioni, P.Setti, Structural Stability Research Council, 1988 Annual Technical Session and Meeting, Minneapolis, April 1988, pag. 321-332.
34) "**Influence of some geometric parameters on stess concentrations at weld toe in longitudinal attachments**", C.A.Castiglioni, U.Bremen, Costruzioni Metalliche, n.4, 1989.
35) "**Effect of Weld toe angle and other Geometrical Parameters on Stress Concentration in Longitudinal Attachments**", C.A.Castiglioni, U.Bremen, A.Bregante, VIII Conferenza Europea della Frattura, ECF-8, Torino, Ottobre 1990, pag. 1528-1533.
36) "**A Stochastic model for estimating the fatigue life of Structural Steel Details**", C.A. Castiglioni, "Journal of Constructional Steel Research", Vol. 18, 1991, pag. 111-138.
37) "**Numerical Simulation of Fatigue Crack Growth**", C.A.Castiglioni, Proceedings del Workshop I.A.B.S.E. "Remaining Fatigue Life of Steel Structures", Losanna, Aprile 1990, pag. 199-208.
38) "**A Re-analysis of Fatigue test Results on Welded Steel Members: Knowledge Gaps, Research Needs and Standardization Requirements**", C.A.Castiglioni, RILEM Workshop on "Needs in Testing Metals", Napoli, Maggio 1990.
39) "**Analisi parametrica della concentrazione delle tensioni al piede di saldatura in attacchi longitudinali**", C.A.Castiglioni, P. Gianola, Rivista Italiana della Saldatura, n.2, 1991, pag. 103-115
40) "**Analisi parametrica della concentrazione delle tensioni al piede di saldatura in attacchi longitudinali**", C.A.Castiglioni, P. Gianola, XIII Convegno C.T.A., Abano Terme, Ottobre 1991, pag. 143-155.
41) "**Parametric analysis of weld toe stress concentration in longitudinal attachments**",C.A. Castiglioni, P. Gianola, Welding International, Vol. 6, n.4, 1992.
42) "**Validazione sperimentale dell'applicabilità di un modello di accumulazione lineare del danno nel caso di elementi inflessi in acciaio sottoposti ad azioni sismiche**", C.A. Castiglioni, P.L.Losa, XIII Convegno C.T.A., Abano Terme, Ottobre 1991, pag. 159-170
43) "**Sui coefficienti incasellati di EC-3"**, C.A. Castiglioni, C.Poggi, C.Urbano, XIII Convegno C.T.A., Abano Terme, Ottobre 1991, pag. 7-26.
44) "**Analisi numerica e sperimentale del danneggiamento di elementi strutturali in acciaio soggetti ad azioni sismiche**", C.A. Castiglioni, V Convegno Nazionale "L'Ingegneria Sismica in Italia", Palermo, Ottobre 1991.
45) "**Analisi numerica e sperimentale del danneggiamento di elementi strutturali in acciaio soggetti ad azioni sismiche**", C.A. Castiglioni, "Ingegneria Sismica", Anno IX, n.1, 1992, pag. 9-15.
46) "**Local buckling and structural damage in steel members under cyclic loading**", C.A.Castiglioni, P.L.Losa, X World Conference on Earthquake Engineering, Madrid, 1992, pag. 2891-2896
47) "**A new approach to the seismic design of steel structures**", C.A. Castiglioni, P.L. Losa, Proc. of the 1st world Conf. on Constructional Steel Design, Acapulco, Dec. 1992, pag. 491-500.
48) "**Le costruzioni metalliche in zona sismica: un criterio di progetto basato sull'accumulazione del danno**", G.Ballio, C.A. Castiglioni, XIV C.T.A., Viareggio, Oct. 1993, pag. 99-109.
49) "**Le costruzioni metalliche in zona sismica: un criterio di progetto basato sull'accumulazione del danno"**, G.Ballio, C.A. Castiglioni, VI Convegno L'ingegneria sismica in Italia, Perugia, Sept. 1993, vol.2, pag. 745-754.

50) "**Seismic behavior of steel sections**", G. Ballio, C.A. Castiglioni, Journal of Constructional Steel Research, Vol. 29, 1994, p.21-54
51) "**Damage assessment in steel members under seismic loading"**, G. Ballio, C.A. Castiglioni, STESSA, Timisoara, July 1994, pag. 63-76
52) "**Effects of local buckling on the cyclic behavior of steel members**", C.A. Castiglioni, S.S.R.C. 50th Anniversary Meeting, Bethlehem, June 1994, Proceedings of the Technical Session, pag. 381-395.
53) "**Damage assessment in structural steel members and welded joints under seismic loading**", C.A. Castiglioni, Int. Workshop on Cumulative damage in Structures, Napoli, June 1994, pag. 21-35.
54) "**An approach to the seismic design of steel structures based on cumulative damage criteria**", G.Ballio, C.A.Castiglioni, Earthquake Engineering & Structural Dynamics, Vol. 23, 1994, p. 969-986
55) "**A unified approach for the design of steel structures under low/or high cycle fatigue**", G. Ballio, C.A. Castiglioni, Journal of Constructional Steel Research, Vol. 34, 1995, p. 75-101
56) "**Seismic damage assessment of steel members and joints**", C.A.Castiglioni, SSRC, Theme Conference on Stability Problems related to aging, damaged and deteriorated structures, Kansas City, March 1995, pag. 55-66.
57) "**Seismic behavior of steel beam-column members**", C.A.Castiglioni, SSRC, Theme Conference on Stability Problems related to aging, damaged and deteriorated structures, Kansas City, March 1995, pag. 77-88.
58) "**Low-cycle fatigue testing of semi-rigid beam-to-column connections**", L. Calado, C.A.Castiglioni, 3rd Int. Workshop on Connections in Steel Structures, IABSE/AISC, Trento, May 1995.
59) "**Cumulative damage assessment in structural steel details**", C.A.Castiglioni, IABSE Symposium on Extending the lifespan of structures, S.Francisco, Aug. 1995, pag. 1061-1066.
60) "**Assessment of behavior factors for steel frames basedon linear elastic analysis and cumulative damage criteria**", C.A. Castiglioni, VII Sympsium l'Ingegneria Sismica in Italia, Siena, Sept. 1995, pag. 589-598.
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