

ALPER KANYILMAZ

Civil Engineer, PhD

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Curriculum vitae - 05.01.2018

SUMMARY

Alper Kanyilmaz is a Civil Engineer with a PhD degree (with honor) from Politecnico di Milano. He is experienced in large scale testing and numerical analysis, mainly in the fields of steel structures, seismic isolation systems and industrial structures (silos, racks). He has 40+ publications in the top international journals and peer-reviewed conferences. During his PhD, he co-supervised 9 Master thesis students, and assisted two professors for 6 Master courses. He has two awards from international design competitions. He wrote and co-authored several research proposals which obtained 1M+ Eur grant from European Union. He is currently a temporary research fellow in Politecnico di Milano.

EDUCATION

PhD in Civil Engineering Department of Architecture, Built Environment and Construction Engineering Politecnico di Milano (Italy), Honor degree (Cum laude)	Nov 2013 - Mar 2017
MSc in Civil Engineering Politecnico di Milano (Italy).	October 2007 - May 2010
BSc in Civil Engineering Middle East Technical University (Turkey).	October 2001 - July 2006

WORK EXPERIENCE

Research fellow @ Department of Architecture, Built Environment and Construction Engineering, Politecnico di Milano (Italy) August 2010 - Present
Major Projects:

- INNOSEIS (2016-Present): Valorisation of innovative anti-seismic devices, EU-RFCS contract n. RFCS-AM 709434
- MEAKADO (2013-2016): Numerical studies and development of new design guidelines for the optimized performances of braced frames in moderate seismicity regions, EU-RFCS contract n. RFSR-CT-2013-00022
- SEISRACKS2 (2011-2013): Management of the full-scale tests to investigate the seismic behaviour of industrial storage pallet racking systems, EU-RFCS contract n. RFSR-CT-2011-00031
- FUSEIS (2008-2010): Management of the full-scale experimental tests and advanced numerical analysis on seismic resistant steel frames with dissipative fuses, EU-RFCS contract n. RFSR-CT-2008-00032

Teaching assistant at the following courses:

- Building systems and component design (ID. 083470), Master of Science degree, CFU 9.00, Sem.2 of 2014-2015 and 2015-2016, Ing VI-EDA (Building Engineering), Milano Leonardo, No. of students enrolled: 49 and 46, Instructor: Prof. Enrico De Angelis

- Architecture of Steel Constructions (ID. 099901), Master of Science degree, CFU 4.00, Sem.1 of 2016-2017, Arc-Urb-Cost, Milano Leonardo, No. of students enrolled: 63, Instructor: Prof. Carlo Andrea Castiglioni
- Design of Structures (ID. 097638), Master of Science degree, CFU 9.00, Sem.1 of 2015-2016 and 2016-2017, Arc-Urb-Cost, Milano Leonardo, No. of students enrolled: 16 and 38, Instructor: Prof. Carlo Andrea Castiglioni
- L'Architettura delle Costruzioni di Acciaio (ID. 096513), Master of Science degree, CFU 4.00, Sem.1 of 2014-2015 and 2015-2016, Arc-Urb-Cost, Milano Leonardo and Bovisa, No. of students enrolled: 38 and 37, Instructor: Prof. Carlo Andrea Castiglioni

Reviewer in the following scientific journals:

- Journal of Constructional Steel Research (Elsevier), Thin Walled Structures (Elsevier), Journal of Structural Engineering (ASCE), The Open Civil Engineering Journal (Bentham open)

Professional consulting activity

July 2010 - Present

Scientific consultant of the research projects funded by European Commission:

- LASTEICON (2016-present): Project coordination and several engineering tasks to develop innovative steel connections using laser cutting technology, EU-RFCS contract n. RFCS-RPJ 709807
- FASTCOLD (2017-present): Numerical analysis to investigate the fatigue strength of cold-formed structural steel details, EU-RFCS contract n. RFCS-RPJ 745982
- STEELWAR (2017-present): Development of advanced structural solutions for automated steel rack supported, EU-RFCS contract n. RFCS-RPJ 754102
- PROINDUSTRY (2013-2016): Seismic retrofitting of Industrial silos and tanks, EU-RFCS contract n. RFSR-CT-2013-00019

Structural engineer @ Agenzia Milano Strutture (Italy)

July 2013 - Dec 2016

- Assistance for the executive design of reinforced concrete residential buildings (City life project)

PERSONAL SKILLS

Language	Fluent in English, Italian, Native in Turkish
Software	MATLAB, ABAQUS, ANSYS, SAP2000, STRAND7, AUTOCAD, EXCEL
Other	Cycling, tennis, music

AWARDS, GRANTS AND SCHOLARSHIPS

Joint winner @ International Concrete Design Competition 2008:

1450 Eur award, fully funded participation in the Concrete Design Master Class in Antwerp, Belgium

2nd rank @ Prosteel, International Steel Design Competition, 2006:

2000 Eur award, Structural engineer of the project group (with three architects)

Full Scholarship of ICE Unioncamere 2007:

Master of Science study in Politecnico di Milano

Full Scholarship 1999:

Private high school education Ozel Ege Lisesi, Turkey

SCIENTIFIC PUBLICATIONS

International Journal Publications:

Kanyilmaz, A., Moderate ductility of the bracing joints with preloaded bolts (2018), Bulletin of Earthquake Engineering, 16: 503. <https://doi.org/10.1007/s10518-017-0208-5>

Kanyilmaz, A., Castiglioni C.A., Reducing the seismic vulnerability of existing elevated silos by means of base isolation devices (2017), Engineering Structures, 143, pp. 477-497

Kanyilmaz, A., Role of compression diagonals in concentrically braced frames in moderate seismicity: A full scale experimental study (2017) Journal of Constructional Steel Research, Volume 133, Pages 1-18, June 2017

Kanyilmaz, A., Secondary frame action in concentrically braced frames designed for moderate seismicity: a full scale experimental study (2017) Bulletin of Earthquake Engineering, 15 (5), pp. 2101-2127.

Valente, M., Castiglioni, C.A., **Kanyilmaz, A.**, Numerical investigations of repairable dissipative bolted fuses for earthquake resistant composite steel frames (2017) Engineering Structures, 131, pp. 275-292.

Valente, M., Castiglioni, C.A., **Kanyilmaz, A.**, Welded fuses for dissipative beam-to-column connections of composite steel frames: Numerical analyses (2017) Journal of Constructional Steel Research, 128, pp. 498-511.

Valente, M., Castiglioni, C.A., **Kanyilmaz, A.**, Dissipative devices for earthquake resistant composite steel structures: bolted versus welded solution (2016) Bulletin of Earthquake Engineering, 14 (12), pp. 3613-3639.

Kanyilmaz, A., Castiglioni, C.A., Brambilla, G., Chiarelli, G.P., Experimental assessment of the seismic behavior of unbraced steel storage pallet racks (2016) Thin-Walled Structures, 108, pp. 391-405.

Kanyilmaz, A., Brambilla G., Chiarelli G., Castiglioni C.A, Assessment of the seismic behavior of braced steel storage racking systems by mean of full scale push over tests, Thin- Walled Structures, 107(2016) 138155

Kanyilmaz, A., Validation of Fiber-Based Distributed Plasticity Approach for Steel Bracing Models, Civil Engineering Journal Vol.1, No.2, 2015, ISSN:2476-3055

Castiglioni C.A., **Kanyilmaz, A.**, Calado L., Experimental analysis of seismic resistant composite steel frames with dissipative devices, Journal of Constructional Steel Research v.76, p.1-12, 2012

Castiglioni C.A., **Kanyilmaz, A.**, Calado L., Prioena J.M., Hoffmeister B., Vayas I., Numerical and experimental results of the FUSEIS project Dissipative devices for seismic resistant frames, Costruzioni Metalliche, March-April 2014;

National Italian journal publications:

Gabbianelli, G., **Kanyilmaz, A.**, Bernuzzi, C., Castiglioni, C.A., A combined experimental-numerical study on unbraced pallet rack under pushover loads (2017) Ingegneria Sismica, 34 (1), pp. 18-38.

Castiglioni, C.A., **Kanyilmaz, A.**, Simplified numerical modeling of elevated silos for nonlinear dynamic analysis (2015) Ingegneria Sismica, 33 (1-2), pp. 5-14.

Castiglioni C.A., **Kanyilmaz, A.**, et al. The SEISRACKS2 EU-RFCS Research Project Seismic Behaviour of Steel Storage Pallet Racking Systems, *Costruzioni Metalliche*, LXVII, n.1, 2015, pp 37-48.

Kanyilmaz, A., Castiglioni C.A., Chiarelli, G.P., Brambilla G., Modellazione numerica di silos e serbatoi in acciaio soggetti ad azioni sismiche, *Il Giornale dell'ingegnere*, n.11, 2015, pp 8,10, Qine, Milano

Castiglioni C.A., **Kanyilmaz, A.**, Chiarelli G.P., Brambilla G., The research Activities at Politecnico di Milano on the Static and Seismic Behaviour of Steel Storage Racking Systems, *Costruzioni Metalliche*, XVIII,n.3 2016, pag 25-41

Book chapters:

Castiglioni C.A, **Kanyilmaz, A.** et al., Seismic Behaviour of Steel Storage Pallet Racking Systems (SEISRACKS2), European Commission, Research Fund for Coal and Steel, Final Report, EUR 27583 EN, doi: 10.2777/931597, ISBN 978-92-79-53896-4, KI-NA-27-583-EN-C, 2014

Vayas, I., Karydakis, P., Dimakogianni, D. Dougka, G., **Kanyilmaz, A.**, Castiglioni, C.A., Hoffmeister, B., Heinmeyer, C., Rauert, T., Espinha, M., Calado, L., Proenca, J., Kalteziotis, D., Dissipative devices for seismic-resistant steel frames (Fuseis), European Commission, Research Fund for Coal and Steel, Final Report, doi:10.2777/88177, ISBN 978-92-79-29186-9, KI-NA-25901-EN-N, 2013

Conference Proceedings:

Kanyilmaz, A., Castiglioni C.A., Raso S., Valli A., Brugnolli M., Galazzi A., Hojda R., Circular hollow section joint fabrication using laser cutting technology: Tolerance assessment, *Tubular Structures XVI*, Taylor Francis Group, London, ISBN 978-0-8153-8131-1, pp. 631-637 (2018)

Martin P.O., Rodier A., Couchaux M., **Kanyilmaz, A.**, Degee. H., Assessment of the ductile behaviour of CBF structures considering energy dissipation in bolted joints, *EUROSTEEL 2017*, September 1315, 2017, Copenhagen, Denmark, Ernst Sohn Verlag fr Architektur und technische Wissenschaften GmbH Co. KG, Berlin, CE/papers (2017)

Kanyilmaz, A., Castiglioni C.A., Degee H., Seismic behaviour of concentrically braced frames in the moderate seismicity context, *EUROSTEEL 2017*, September 1315, 2017, Copenhagen, Denmark, Ernst Sohn Verlag fr Architektur und technische Wissenschaften GmbH Co. KG, Berlin, CE/papers (2017)

Kanyilmaz, A., Castiglioni C.A., Brambilla G., Gjoka K., Galazzi A., Raso S., Valli A., Brugnolli M., Hojda R., Experimental assessment of tolerances for the fabrication of laser-cut steel joints, *EUROSTEEL 2017*, September 1315, 2017, Copenhagen, Denmark, Ernst Sohn Verlag fr Architektur und technische Wissenschaften GmbH Co. KG, Berlin, CE/papers (2017)

Vamvatsikos D., Castiglioni C.A., Bakalis K., Calado L., D'Aniello M., Degee H., Hoffmeister B., Pinkawa M., Proenca J.M., **Kanyilmaz, A.**, Morelli F., Stratan A., Vayas I., A risk-consistent approach to determine behaviour factors for innovative steel lateral load resisting systems, *EUROSTEEL 2017*, September 1315, 2017, Copenhagen, Denmark, Ernst Sohn Verlag fr Architektur und technische Wissenschaften GmbH Co. KG, Berlin, CE/papers (2017)

Degee H., Henriques J., Martin P.O., Calderon I., **Kanyilmaz, A.**, Castiglioni C.A., Optimal Design of Concentrically Braced Steel Frames in Moderate Earthquake Areas, *Proceedings of 16th World Conference on Earthquake Engineering 2017*

Kanyilmaz, A., Castiglioni C.A., Degee H., Full Scale Experimental Assessment of Concentrically Braced Steel Frames Designed for Moderate Seismicity, Proceedings of 16th World Conference on Earthquake Engineering 2017

Castiglioni, C.A, **Kanyilmaz, A.**, Degee H., Calderon, I., Martin, P.O., Design of concentrically braced steel frames for optimized performances in moderate earthquake areas, Proceedings of the International Colloquium on Stability and Ductility of Steel Structures, SDSS 2016, ISBN 978-929147133-1

Aramburu A., Calderon I., Couchaux M., Degee H., Hoffmeister B., **Kanyilmaz, A.**, Martin, P.O., Wiescholke M., Design of Steel and Composite Structures with Limited Ductility Requirements for Optimized Performances in Moderate Earthquake Areas The "Meakado" Project, SECED 2015 Conference: Earthquake Risk and Engineering towards a Resilient World 9-10 July 2015, Cambridge UK

Kanyilmaz, A., Numerical modelling of the seismic behaviour of steel silos and tanks, Oral presentation, International CAE Conference 2015, Pacengo del Garda, Verona, Italy

Kanyilmaz, A., Castiglioni, C.A, J. Georgi, Seismic retrofit of industrial silos by means of base isolation devices, Proc of ECCOMAS 2016, Paper n. 9498

Castiglioni, C.A, **Kanyilmaz, A.**, G. Brambilla, G.P. Chiarelli, Steel Storage Pallet Racking Systems in Seismic Areas: Full Scale Pushover Tests and Numerical Simulations, Proceedings of the 6th Symposium on Steel Structures, Eskisehir, Turchia, November 2015, pp. 1-16

Kanyilmaz, A., Castiglioni, C.A, H. Degee, P.O. Martin, A preliminary assessment of slenderness and over-strength homogeneity criteria used in the design of concentrically braced steel frames in moderate seismicity, Proc. 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2015, pp. 3599-3609

Kanyilmaz, A., Castiglioni, C.A, Performance of multi-storey composite steel-concrete frames with dissipative fuse devices, Proc. 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2015, Pages 334-348

Kanyilmaz, A., Inelastic cyclic numerical analysis of steel struts using distributed plasticity approach, Proc. 5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2015, Pages 3663-3674

Castiglioni, C.A, **Kanyilmaz, A.**, M. Angeretti, G. Brambilla, G.P. Chiarelli, C. Bernuzzi, Experimental Results of Full Scale Push-Over Tests of Project SEISRACKS2 (Seismic Behaviour of Steel Storage Pallet Racking Systems), Proceedings of the 2nd European Conference on Earthquake Engineering, Istanbul, Aug. 2014, pp.

Castiglioni, C.A, **Kanyilmaz, A.**, Numerical and Experimental Results of Project FUSEIS (Seismic Resistant Composite Steel Frames), Proceedings of the 2nd European Conference on Earthquake Engineering, Istanbul, Aug. 2014, pp.

Castiglioni, C.A, **Kanyilmaz, A.**, Project EU-RFCS SEISRACKS2: Seismic Behaviour of Steel Storage Pallet Racking Systems Invited Lecture, Proc. of the 5th Symposium on Steel Structures, Istanbul, November 2013, pp. 207-252

Castiglioni, C.A, **Kanyilmaz, A.**, Numerical and Experimental results of Project Fuseis (Dissipative Devices for Seismic-Resistant Steel Frames), Invited Lecture, Proc. of the 5th Symposium on Steel Structures, Istanbul, November 2013, pp. 151-168

O. Kutlukaya, E. Akta, C.A. Castiglioni, C.A, **Kanyilmaz, A.**, Restoration of a Stone Masonry Residence in eme, Izmir, Turkey, Proceedings of 2nd International Conference On Protection

Of Historical Constructions PROHITECH 2014, Antalya, Turkey, May 2014, pp.

Castiglioni, C.A, **Kanyilmaz, A.**, Seismic Isolation for Ancient Statues Displayed in Base Isolated Museums, Proceedings of 2nd International Conference On Protection Of Historical Constructions PROHITECH 2014, Antalya, Turkey, May 2014, pp.

Castiglioni, C.A, **Kanyilmaz, A.**, H. Degee, C. Braham, B. Hoffmeister, C. Heinemeyer, I. Vayas,

K. Adamakos, S. Sesana, B. Orsatti, The SEISRACKS2 EU-RFCS Research Project : Seismic Behaviour of Steel Storage Pallet Racking Systems - Part 1: Project Overview, Proceedings of XXIV C.T.A., Torino, September 2013, pp. 465-472

Castiglioni, C.A, **Kanyilmaz, A.**, H. Degee, C. Braham, B. Hoffmeister, C. Heinemeyer, I. Vayas,

K. Adamakos, The SEISRACKS2 EU-RFCS Research Project: Seismic Behaviour of Steel Storage Pallet Racking Systems - Part 2: Experimental Activities, Proceedings of XXIV C.T.A., Torino, September 2013, pp. 473-480

Castiglioni, C.A, **Kanyilmaz, A.**, H. Degee, C. Braham, B. Hoffmeister, C. Heinemeyer, I. Vayas, K. Adamakos, N. Papadopoulos, The SEISRACKS2 EU-RFCS Research Project: Seismic Behaviour of Steel Storage Pallet Racking Systems - Part 3: Numerical Activities, Proceedings of XXIV C.T.A., Torino, September 2013, pp. 481-488

Castiglioni, C.A, A. Drei, **Kanyilmaz, A.**, P. Carydis, H. Mouzakis, Static and dynamic friction behaviour tests for storage racking systems: static properties, Proceedings of XXIV C.T.A., Torino, September 2013, pp. 795-802

Castiglioni, C.A, **Kanyilmaz, A.**, L. Calado, J.M. Proena, B. Hoffmeister, I Vayas, Numerical and experimental results of Project FUSEIS (Dissipative Devices for Seismic-Resistant Steel Frames), Proceedings of XXIV C.T.A., Torino, September 2013, pp. 795-802

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Steel Frames with Dissipative Devices, Journal of Constructional Steel Research, 76 (2012), 1-12

Castiglioni, C.A, A. Drei, **Kanyilmaz, A.**, L. Calado, I. Vayas, B. Hoffmeister, R. Goncalves, Numerical and Experimental Results of Project FUSEIS (Seismic Resistant Composite Steel Frames), 15 WCEE, Lisbon, September 2012, Paper n. 3512

Castiglioni, C.A, **Kanyilmaz, A.**, A new approach for the Seismic Isolation Methods for Ancient Statues Displayed in Base Isolated Museums, 15 WCEE, Lisbon, September 2012, Paper n. 3514

Castiglioni, C.A, **Kanyilmaz, A.**, Vertical Seismic Isolation of Ancient Statues Displayed in Base Isolated Museum Buildings, Proceedings of the XIV European Conference on Earthquake Engineering, Ohrid, Macedonia, September 2010, paper n. 441, on CD

Castiglioni, C.A, **Kanyilmaz, A.**, Dissipative Devices for Seismic Resistant Steel Frames, Proceedings of the 8th International Conference on New trends in Statics and Dynamics of Buildings, Bratislava, October 2010, on CD

Castiglioni, C.A, **Kanyilmaz, A.**, Seismic Isolation for Ancient Statues on Display, Proceedings of the 8th International Conference on New trends in Statics and Dynamics of Buildings,

Bratislava, October 2010, on CD

Kanyilmaz, A., Seismic Resistant Composite Steel Frames with Replaceable Dissipative Devices, Oral Presentation at Young Researchers Conference 2012, The Institution of Structural Engineers, London, UK

Kanyilmaz, A., Castiglioni, C.A, A. Drei, I. Vayas, L. Calado, T. Rauert, Nonlinear dynamic response of dissipative devices for seismic resistant steel frames: experimental behaviour and numerical simulation, Proc. Of COMPDYN 2011, III ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Corfu, Greece, May 2011, 13p

Castiglioni, C.A, **Kanyilmaz, A.**, Three dimensional nonlinear dynamic modelling of a vertically isolated ancient statue displayed in a base isolated museum building, Proc. Of COMPDYN 2011, III ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Corfu, Greece, May 2011, 19p

Kanyilmaz, A., Castiglioni, C.A, A. Drei, L. Calado, I. Vayas, T. Rauert, R.M. Goncalves, Dissipative devices for seismic resistant steel frames, Proc. Of Eurosteel 2011, Budapest, Hungary, Sept. 2011

Castiglioni, C.A, **Kanyilmaz, A.**, A.Drei, L.Calado, M. Espihna, R.M. Goncalves, T. Rauert, I. Vayas, Seismic Resistant Composite Steel Frames with Dissipative Fuse Devices, Proc. CTA 2011, Ischia October 2011, pp. 333-340

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