Curriculum Vitae et Studiorum

Chiara Smerzini

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Personal Information

Born in Milan, July 2, 1982.
Italian Citizenship.
Residence: Via Nullo, 14 - 20129 Milano.
Two sons. Maternity leave: 06/07/2016 - 31/03/2017; 18/07/2019 - 31/01/2020.

Education

Sept. 2007 – Dec. 2010 PhD in Earthquake Engineering and Engineering Seismology, Istituto Universitario di Studi Superiori IUSS – ROSE School (Centre for Post-Graduate Training and Research in Earthquake Engineering and Engineering Seismology), Pavia, Italy.
Thesis: "*The earthquake source in numerical modeling of seismic wave propagation in heterogeneous earth media*".

Sept. 2006 – May 2008 Postgraduate MSc degree in Engineering Seismology within the Erasmus Mundus program MEEES (Masters in Earthquake Engineering and Engineering Seismology) jointly awarded by Istituto Universitario di Studi Superiori IUSS di Pavia, Italy, and the University of Grenoble Joseph Fourier, France, and University of Patras, Greece.
Thesis: "*Earthquake-induced transient ground strains and rotations from dense seismic arrays*".

Oct. 2004 – July 2006 MSc degree in Environmental and Land Planning Engineering, Politecnico di Milano, Italy. Mark: 110/110 *cum laude*.

Oct. 2001 – July 2004 BSc degree in Environmental and Land Planning Engineering, Politecnico di Milano, Italy. Mark: 110/110 *cum laude*.

July, 2001 High school diploma (scientific oriented), Liceo Scientifico "R. Donatelli – B. Pascal", Milano, Italy. Mark: 100/100.

National Qualifications

Sept. 2018 National Scientific Qualification as Associate Professor in Structural Design 08/B3 (*Tecnica delle Costruzioni*).

Oct. 2013 National Professional Qualification as Civil and Environmental Engineer.

Academic Positions

May 2020 – present Associate Professor of Structural Design (ICAR/09), Department of Civil and Environmental Engineering, Politecnico di Milano.

Dec. 2016 – present Senior Researcher (*Ricercatore a Tempo Determinato Senior - RTDb*) of Structural Design (ICAR/09), Department of Civil and Environmental Engineering, Politecnico di Milano.

Dec. 2014 – Nov. 2015 Postdoctoral Fellow at the Department of Civil Engineering, Aristotle University of Thessaloniki, in the framework of the European Project STREST "*Harmonised approach to stress tests for critical infrastructures against natural hazards*", Seventh Framework Programme EU FP7/2007-2013.

Sept. 2012 – Nov. 2013 Postdoctoral Fellow at the Department of Civil and Environmental Engineering (DICA), Politecnico di Milano, in the framework of the 2012–2014 MRPM I Project "*Numerical Approaches for Earthquake Ground Shaking Scenarios in Large Urban Areas*", agreement between Politecnico di Milano and the re-insurance company Munich RE.

Sept. 2010 – Aug. 2012 Postdoctoral Fellow at the Department of Structural Engineering, Politecnico di Milano, in the framework of the 2010–2013 DPC-RELUIS Project "*Development of displacement-based approaches for vulnerability assessment*".

Professional Positions

Apr. 2016 – Oct. 2016 Senior Engineer, Civil and Geotechnical Engineering Division, Betti S.p.A., Terni, Italy.

Nov. 2013 – Nov. 2014 Senior Engineer, Geosciences Division, GeoHazard Group, D'Appolonia S.p.A., Genova, Italy.

Research Positions Abroad

Dec. 2014 – Nov. 2015 Post-Doc at the Department of Civil Engineering, Aristotle University of Thessaloniki.

Sept. 2007 – Jan. 2008 PhD student at the Department of Engineering, Universidad Nacional Autónoma de México (UNAM).

Sept. 2006 – Feb. 2007 MSc student (program MEEES) at the University of Grenoble Joseph Fourier (France).

Awards

- *Best paper prize* for the article "*Spatial variability of near-source seismic ground motion with respect to different distance metrics, with special emphasis on May 29 2012 Po Plain Earthquake, Italy*", by K. Hashemi, I. Mazzieri, R. Paolucci, and C. Smerzini, awarded at the 7th International Conference on Seismology and Earthquake Engineering, Tehran, Iran, 2015.
- *Carlo Maddalena Onlus* prize for the best thesis in Civil, Environmental and Land Planning Engineering at Politecnico di Milano during the academic year 2005–2006.

Teaching Activity

Lecturer

Since A.Y. 2020/2021

- Buildings in Seismic Areas (6 ECTS, in English), Master Degree Program in Building and Architectural Engineering, School of Architecture Urban Planning Construction Engineering, Politecnico di Milano.

Since A.Y. 2018/2019

- Earthquake Engineering Analysis - Applications of Structural Dynamics to Earthquake Engineering (5 ECTS, Integrated Course, in English), Master Degree Program in Civil Engineering - Earthquake Engineering, School of Civil, Environmental and Land Management Engineering, Politecnico di Milano.

Since A.Y. 2017/2018

- Risk-Based Design (4 ECTS, in English), Master Degree Program in Building Architecture, School of Architecture Urban Planning Construction Engineering, Politecnico di Milano.

From A.Y. 2017/2018 to 2019/2020

- Structural Design (4 ECTS, in English), Master Degree Program in Architecture and Urban Design, School of Architecture Urban Planning Construction Engineering, Politecnico di Milano.
- Risk-Based Design (4 ECTS, in English), Master Degree Program in Building Architecture, School of Architecture Urban Planning Construction Engineering, Politecnico di Milano.

Since A.Y. 2012/2013

- Elementi di Sismologia Applicata all'Ingegneria (Engineering Seismology). Master (Level II) Degree Program in "*Design of seismic sustainable structures in construction works*", Master School Fratelli Pesenti, Politecnico di Milano.

A.Y. 2017/2018

- Final test - Structural Design (1 ECTS), Degree Program in Civil Engineering, School of Civil, Environmental and Land Management Engineering, Politecnico di Milano.

June 26 – 30, 2017

- Seismic wave propagation: theory and numerical modelling, Summer School "SeisMath 2017 – Mathematical Models in Seismology" for PhD and MSc students in Applied Mathematics. Gran Sasso Science Institute – G.S.S.I., L'Aquila, Italy.

Student Advising

Doctoral Level

- J. Lin "*Hazard and risk assessment in urban areas based on 3D physics-based ground shaking scenarios*". PhD thesis in Structural, Seismic and Geotechnical Engineering, Politecnico di Milano, XXXV cycle, within the ITN URBASIS Project. Advisor: C. Smerzini. Co-advisor: D. Pitilakis (Aristotle University of Thessaloniki, Greece). *On-going work.*
- A. Poudel. "*Evaluation of the systemic vulnerability and risk of interconnected systems at urban, suburban, and industrial scales*". PhD thesis at the Department of Civil Engineering of the Aristotle University of Thessaloniki, Greece, within the ITN URBASIS Project. Advisor: K. Pitilakis. Co-advisor: C. Smerzini. *On-going work.*
- K. Hashemi, "*Engineering characterization of near-source ground motion by physics-based numerical simulations*". PhD thesis in Structural, Seismic and Geotechnical Engineering, Politecnico di Milano, XXIX cycle. Advisor: Prof. R. Paolucci. Co-advisor: C. Smerzini.

Visiting PhD students

- X. Chen. "*3D numerical modeling of seismic response of the Mygdonian basin, NorthEast Greece*", within the EU Project SERA SITE3D. Visiting PhD student from the Geotechnical Research lnstitute, Hohai University (China). Period: Oct. 2018 – Oct. 2020.
- C. Huang. "*Study of the spatial correlation features of earthquake ground motions from 3D physics-based numerical simulations: application to the Feb. 22, 2011 Christchurch earthquake, New Zealand*". Visiting PhD student from the University College London UCL. Period: Mar. 2019 – Jul. 2020.

- S. Touhami. "*Verification tests for the modeling of point- and finite- fault sources in spectral element methods*". Visiting PhD student from the University Paris-Saclay, CentraleSupélec (France). Period: Feb. 2019 – Apr. 2019.
- A. Roshan. "*Analysis and characterization of near-fault ground motions for engineering aims*". Visiting PhD student from the Kurdistan University. Period: Sept. 2017 – Mar. 2018.

Master Level

- G. Corti "*On the construction of seismic fragility curves using physics-based numerical simulations*". MSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2020/2021. Advisor: R. Paolucci. Co-advisor: C. Smerzini. *On-going work.*
- A. Herlin "*A numerical algorithm to couple regional ground motion simulations with building response models*". MSc Thesis in Civil and Mathematical Engineering, Politecnico di Milano, A.Y. 2020/2021. Advisors: P.F. Antonietti, I. Mazzieri, C. Smerzini. *On-going work.*
- M. Vittone "*Spatial variability of ground motions for seismic analysis of bridge structures: insights from recordings and physics-based numerical simulations*". MSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2020/2021. Advisor: C. Smerzini.
- M. S. Nazir "*Source-related variability of seismic site amplification in Norcia, Central Italy*". MSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2020/2021. Advisor: C.Smerzini. Co-advisor: M. Vanini.
- F. Ramadan. "*Vertical seismic action for design: a model for Vertical-to-Horizontal response spectral ratios for Italy*". MSc Thesis in Civil Engineering for Risk Mitigation, Politecnico di Milano, A.Y. 2019/2020. Advisor: C.Smerzini. Co-advisor: G. Lanzano.
- D. Pala "*Inelastic seismic demand from records and from numerical simulations of ground motion during the Po Plain earthquake of May 29 2012*". MSc Thesis in Environmental and Land Planning Engineering, Politecnico di Milano, A.Y. 2019/2020. Advisors: R. Paolucci, C. Galasso, C. Smerzini.
- E. Manuzzi "*Broadband Earthquake Ground Motion from Physics-Based Numerical Simulations Using Artificial Neural Networks*". MSc Thesis in Mathematical Engineering, Politecnico di Milano, A.Y. 2018/2019. Advisor: P.F. Antonietti. Co-advisors: C. Smerzini, I. Mazzieri.
- H. Pourshayegan "*3D Physics-based simulations of the October 30 2016 Central Italy earthquake*". MSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2018/2019. Advisor: R. Paolucci. Co-advisors: C. Smerzini, A.G. Ozcebe.
- G. Sheng "*Filling the gap between engineering seismology and earthquake structural engineering: seismic analysis of an existing viaduct in Turkey using the results of 3D physics-based earthquake simulations*". MSc Thesis in Civil Engineering for Risk Mitigation, Politecnico di Milano. A.Y. 2018/2019. Advisor: R. Paolucci. Co-advisors: A.G. Ozcebe, C. Smerzini.
- M. I. Cortes Camus. "*3D physics-based numerical scenarios for earthquake strong ground motion prediction: the case of the San Ramon fault in Santiago de Chile basin*". MSc Thesis in Civil Engineering for Risk Mitigation, Politecnico di Milano, A.Y. 2018/2019. Advisor: C. Smerzini. Co-advisor: M. Infantino.
- R. Rodriguez Plata. "*Comparison of 2D and 1D numerical simulations for the evaluation of seismic site effects in sedimentary basins: the case of Norcia basin, Central Italy*". MSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2018/2019. Advisor: C. Smerzini. Co-advisors: C. Lai, A.G. Ozcebe.
- D. Soler. "*Time Domain numerical modeling of offshore wind turbine seismic response*". MSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2017/2018. Advisor: C. Smerzini. Co-advisor: O. Zanoli.
- X. Wang. "*Seismic risk assessment for high-rise buildings in Beijing based on 3D physics-based numerical simulations*". MSc Thesis in Civil Engineering for Risk Mitigation, Politecnico di Milano, A.Y. 2017/2018. Advisor: C.Smerzini. Co-advisor: M. Stupazzini.
- V. Bhanu. "*Effect of Vertical Component and Spatial Variability of Ground Motion on a Bridge Structure*". MSc Thesis in Civil Engineering for Risk Mitigation, Politecnico di Milano, A.Y. 2016/2017. Advisor: C. Smerzini.

- A. Zambon "*Effetti di sorgente sismica ed effetti di sito durante il terremoto di Parkfield 2004, California*". MSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2015/2016. Advisor: R. Paolucci. Co-advisor: C. Smerzini.

Bachelor Level

- R. Barcellini. "*Analisi sismica lineare di una struttura a telaio: confronto tra analisi modale con spettro di risposta e analisi nel dominio del tempo*". BSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2018/2019. Advisor: C. Smerzini.
- G. Grossato. "*Valutazione della risposta sismica di un ponte: analisi teorica e numerica*". BSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2018/2019. Advisor: C. Smerzini.
- G. Grillo. "*I principi dell'ingegneria sismica: calcolo, validazione ed utilizzo dello spettro di risposta*". BSc Thesis in Civil Engineering, Politecnico di Milano, A.Y. 2017/2018. Advisor: C. Smerzini.

Teaching Support Activites

- Since 2020, Responsible of the Degree Programme in Civil Engineering for the dissemination and communication activies for schools.
- Since 2019, Member of the Commission of the School of Civil, Environmental and Land Planning Engineering and of the School of Industrial and Information Engineering, in charge of dissemination activities of Politecnico di Milano for schools.

Research Projects

Principal Investigator / Task Leader

- EU Project SITE3D "*Seismic site effects in sedimentary basins from 3D physics-based numerical modeling*". Funded by the European Commission within the Project SERA - Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe, Call H2020-INFRAIA-2016-1. Role: Principal Investigator. Grant: access to EUROSEISTEST facility. Period: Oct. 2018 – April 2020.
- EU Project URBASIS "*New Challenges for Urban Engineering Seismology*". Funded by the European Commission within the Marie Slodowska-Curie Actions, Innovative Training Networks (ITN), Call: H2020-MSCA-ITN-2018. Role: supervision of one doctoral thesis, co-supervision of one doctoral thesis. Grant: 4'066'114 Euro. Period: Nov. 2018 – Nov. 2022.
- Project "*Data Driven Study on Seismic Structural Features of Groningen Ground Motions*". Funded by the Ministry of Economic Affairs and Climate Policy of Netherlands. Role: task leader. Period: Sept. 2018 – Dec. 2019. Grant: 106'800 Euro.
- Project MRPM II "*Integrating Physics-Based Scenarios into PSHA in Large Urban Areas – Probabilistic Seismic Hazard enhanced*".Funded by the re-insurance industry Munich Re, Germany, under the agreement with Politecnico di Milano – Department of Civil and Environmental Engineering (DICA) and Laboratory for Modeling and Scientific Computing (MOX). Role: task leader. Period: Apr. 2015 – Mar. 2017. Grant: 150.000 Euro.
- Project MRPM I "*Numerical Approaches for Earthquake Ground Shaking Scenarios in Large Urban Areas*". Funded by the re-insurance industry Munich Re, Germany, under the agreement with Politecnico di Milano – Department of Civil and Environmental Engineering (DICA) and Laboratory for Modeling and Scientific Computing (MOX). Role: Task Leader. Period: Jan. 2012 – Dec. 2013. Grant: 150.000 Euro.

  HPC Projects
- ISCRA B Project INDQUAKE "*3D numerical simulation of INDuceed earthQUAKEs in the Groningen gas field*". Funded by CINECA, Italy. Role: Principal Investigator. Period: Apr. 2020 – Apr 2021. Grant: 500.000 core-hours on Marconi M100 cluster.
- ISCRA C Project SEIGRON "*3D numerical simulation of SEIsmic wave propagation in the GRONingen gas field for hazard assessment of induced seismicity*". Funded by CINECA, Italy. Role: Principal Investigator. Period: Oct. 2018 – July 2019. Grant: 37.500 core-hours on Marconi cluster.

- ISCRA C Project EQK-NOR "*3D physics-based numerical simulations of earthquake ground motion in Norcia basin during the October 2016 seismic sequence in Central Italy*". Funded by CINECA, Italy. Role: Principal Investigator. Period: Nov. 2017 – Aug. 2018. Grant: 89.600 core-hours on Marconi cluster.
- ISCRA B Project URBSHAKE "*Enhanced seismic hazard assessment at URBan scale based on physics-based high-performance broadband ground SHAKing scEnarios*". Funded by CINECA, Italy. Role: Principal Investigator. Period: July 2016 – July 2017. Grant: 75.467 cores-hours on Marconi cluster.
- LISA Project PBS-CHI "*broadband Physics-Based earthquake Scenarios for enhanced probabilistic seismic hazard analysis at urban scale: application to the areas of Santiago, CHIle, and Beijing, CHIn*". Funded by CINECA, Italy. Role: Principal Investigator. Period: July 2016 – July 2017. Grant: 51.200 on Marconi cluster.

Participant

- POLIMI-swissnuclear Project "*Development of advanced physics-based numerical approaches for earthquake ground motion prediction*" within the SIGMA 2 "*Seismic Ground Motion Assessment*" research programme. Funded by swissnuclear, Switzerland. Role: investigator. Period: May 2017 – May 2022. Grant: 250.000 Euro.
- DPC-RELUIS Project WP4 "*MAppe di Rischio e Scenari di danno sismico*". Funded by the Department of Civil Protection (DPC) under the 2019–2021 DPC-RELUIS agreement. Role: investigator. Period: 2019 – 2021.
- DPC-RELUIS Project WP18 "*Contributi normativi relativi ad Azione Sismica*". Funded by the Department of Civil Protection (DPC) under the 2019–2021 DPC-RELUIS agreement. Role: investigator. Period: 2019 – 2021.
- DPC-RELUIS Special Project RS2 "*Simulations of earthquakes: near-source effects*". Funded by the Department of Civil Protection (DPC) under the 2014–2018 DPC-RELUIS agreement. Role: investigator. Period: 2014 – 2017.
- STREST "*Harmonised approach to stress tests for critical infrastructures against natural hazards*". Funded by the European Union under the Seventh Framework Programme EU FP7/2007-2013, grant agreement no. 603389. Role: investigator. Period: Oct. 2013 – Sept. 2016.
- Seismological Project S2 "*Constraining Observations into Seismic Hazard*". Funded by the Department of Civil Protection (DPC) under the 2012 DPC-INGV agreement. Role: investigator. Period: 2012 – 2013.
- SIGMA "*Seismic Ground Motion Assessment*" with application to the Italian context. Funded by ENEL, Italy. Role: investigator. Period: 2012 – 2013.
- DPC-RELUIS "*Development of displacement-based approaches for vulnerability assessment*" (RELUIS Line 2). Funded by the Department of Civil Protection (DPC) under the 2010–2013 DPC-RELUIS agreement. Role: investigator. Period: 2010 – 2013.
- Seismological Project S4 "*Italian Strong Ground Motion Database*". Funded by the Department of Civil Protection (DPC) under the 2007–2009 DPC-INGV agreement. Role: investigator. Period: 2008 – 2010.
- Seismological Project S2 "*Development of a dynamical model for seismic hazard assessment at national scale*". Funded by the Department of Civil Protection (DPC) under the 2007–2009 DPC-INGV agreement. Role: investigator. Period: 2008 – 2010.
- PRIN "*Prediction of strong motion and generation of shaking maps in the near-fault region of an earthquake*". Funded by the Ministry of Education, University and Research (MIUR). Role: investigator. Period: 2008 – 2010.
- DPC-RELUIS "*Development of displacement-based approaches for design and vulnerability assessment – Shallow and deep foundations*" (RELUIS Line 4), Research Project no. 6, sub-project "*Underground structures: rock tunnels and caverns*". Funded by the Department of Civil Protection (DPC) under the 2005–2008 DPC-RELUIS agreement. Role: investigator. Period: 2005 – 2008.

  HPC Projects

- ISCRA B Project PBES4HAS "*Physics-based earthquake scenarios for hazard assessment in densely urbanized areas*". Funded by CINECA, Italy. Role: investigator. Period: May 2015 – May 2016. Grant: 8 millions of core hours on FERMI cluster, CINECA, Italy.
- PRACE A HPC Project DNS4RISC "*Deterministic Numerical ground motion Simulations for RIsk hazard in Santiago de Chile*". Funded by PRACE "*Partnership for Advanced Computing in Europe*". Period: Sept. 2013 – Sept. 2014. Role: investigator. Grant: 40 millions of core hours on FERMI cluster, CINECA, Italy.
- LISA Project SISMA-URB "*Ground shaking scenarios for advanced seismic hazard assessment analyses in urban areas by a high-performance computational code*". Funded by CINECA and regione Lombardia, Italy, under the 2012–2014 LISA Initiative. Role: investigator. Period: May 2013 – Apr. 2014. Grant: 5 millions of core hours on FERMI cluster, CINECA, Italy.
- ISCRA C HPC project MAGNITUD "*Massively pArallel Numerical sImulaTions of mUlti-scale seismic events*". Funded by CINECA, Italy. Period: 2012 – 2013. Role: investigator. Grant: 340.000 core hours on FERMI cluster, CINECA, Italy.
- LISA Project SINIS "*High-performance numerical simulations for the evaluation of seismic input in complex geomorphological conditions*". Funded by CILEA and regione Lombardia, Italy under the 2010-2012 LISA Initiative. Role: investigator. Period: Sept. 2011 – Aug. 2012. Grant: 400.000 core hours on Lagrange cluster, CILEA, Italy.

National and International Research Collaborations

Research Institutions

- National Institute of Geophysics and Vulcanology – INGV, Milano, Italy.
- National Institute of Oceanography and Applied Geophysics – OGS, Trieste, Italy.
- University School for Advanced Studies – IUSS, Pavia, Italy.
- University of Pavia, Italy.
- Italian Department of Civil Protection, Italy.
- CentraleSupélec Paris-Saclay University, Paris
- University College London – UCL, London, United Kingdom.
- University of Strathclyde, Glasgow, Scotland.
- Aristotle University of Thessaloniki, Thessaloniki, Greece.
- University of Iceland, Reykjavík, Iceland.
- German Research Centre for Geosciences – GFZ, Potsdam, Germany.
- Univerisity of Grenoble, Joseph Fourier
- Technical University of Civil Engineering, Bucharest.

Industry

- Re-insurance company Munich RE, Munich, Germany
- swissnuclear – Association of the Swiss nuclear power station operators, Switzerland.
- EDF – French electric utility company, France.
- Engineering Consulting Company Seister, France.
- Engineering Consulting Group RINA – Geosciences Division, Italy.

Publications

Peer-Reviewed Journal Papers

[J1] E. Schiappapietra, and **C.Smerzini** (2021) Spatial correlation of earthquake ground motion in Norcia (Central Italy) from broadband physics-based simulations. *Bulletin of Earthquake Engineering, submitted.*

[J2] M. Infantino, **C.Smerzini**, and J. Lin (2021) Spatial correlation of spectral accelerations from broadband physics-based numerical simulations. *Earthquake Engineering and Structural Dynamics, submitted.*

[J3] R. Rodríguez-Plata, A. G. Özcebe, **C.Smerzini**, and C. G. Lai (2021) Aggravation factors for 2D site effects in sedimentary basins: the case of Norcia, Central Italy. *Soil Dynamics and Earthquake Engineering, submitted.*

[J4] R. Paolucci, I. Mazzieri, G. Piunno, **C.Smerzini**, M. Vanini, and A.G. Özcebe (2021) Earthquake ground motion modelling of induced seismicity in the Groningen gas field, *Earthquake Engineering and Structural Dynamics*, 50(1): 135-154.

[J5] P. F. Antonietti, I. Mazzieri, L. Melas, R. Paolucci, A. Quarteroni, **C.Smerzini**, M. Stupazzini (2020) Three-dimensional physics-based earthquake ground motion simulations for seismic risk assessment in densely populated urban areas. *Mathematics in Engineering*, 3(2): 1-31.

[J6] A. G. Özcebe, **C.Smerzini**, V. Bhanu (2020) Insights into the effect of spatial variability of recorded earthquake ground motion on the response of a bridge structure. *Journal of Earthquake Engineering*, 24(6): 920–946.

[J7] R. Guidotti, M. Stupazzini, **C.Smerzini**, and R. Paolucci (2019) Comment on "Broadband ground-motion simulation of the 2011 Mw 6.2 Christchurch, new Zealand, Earthquake" by H. N. T. Razafindrakoto, B. A. Bradley, and R. W. Graves, *Bulletin of the Seismological Society of America*, 109(5): 2138.

[J8] R. Paolucci, F. Gatti, M. Infantino, **C.Smerzini**, A.G. Özcebe, and M. Stupazzini (2018) Broad-band ground motions from 3D physics-based numerical simulations using Artificial Neural Networks. *Bulletin of Seismological Society of America*, 103(3): 1272-1286.

[J9] R. Paolucci and **C.Smerzini** (2018) Empirical evaluation of peak ground velocity and displacement as a function of elastic spectral ordinates. *Earthquake Engineering and Structural Dynamics*, 47(1): 245-255.

[J10] **C.Smerzini** and K. Pitilakis (2018) Seismic risk assessment at urban scale from 3D physics-based numerical modeling: the case of Thessaloniki. *Bulletin of Earthquake Engineering*, 16(7): 2609-2631.

[J11] L. Evangelista, S. del Gaudio, **C.Smerzini**, A. d´Onofrio, G. Festa, I. Iervolino, L. Landolfi, R. Paolucci, A. Santo, and F. Silvestri (2017) Physics-based seismic input for engineering applications: a case study in the Aterno River valley, Central Italy. *Bulletin of Earthquake Engineering*, 15(7):2645–2671.

[J12] **C.Smerzini**, K. Pitilakis, and K. Hashemi (2017) Evaluation of earthquake ground motion and site effects in the Thessaloniki urban area by 3D finite-fault numerical simulations. *Bulletin of Earthquake Engineering*, 15(3):787–812.

[J13] J. R. Abraham, **C.Smerzini**, R. Paolucci, and C. G. Lai (2016) Numerical study on basin-edge effects in the seismic response of the Gubbio valley, Central Italy. *Bulletin of Earthquake Engineering*, 14(6):1437–1459.

[J14] R. Paolucci, I. Mazzieri, and **C.Smerzini** (2015) Anatomy of strong ground motion: near-source records and three-dimensional physics-based numerical simulations of the M_W 6.0 2012 May 29 Po Plain earthquake, Italy. *Geophysical Journal International*, 203(3): 2001–2020.

[J15] **C.Smerzini**, C. Galasso, I. Iervolino, and R. Paolucci (2014) Ground motion record selection based on broadband spectral compatibility. *Earthquake Spectra*, 30(4):1427–1448

[J16] Mazzieri, M. Stupazzini, R. Guidotti, and **C.Smerzini** (2013) SPEED: SPectral Elements in Elastodynamics with Discontinuous Galerkin: a non-conforming approach for 3D multi-scale problems. *International Journal for Numerical Methods in Engineering*, 95(12):991–1010

[J17] **C.Smerzini** and M. Villani (2012) Broadband numerical simulations in complex near-field geological configurations: the case of the 2009 M_W 6.3 L'Aquila earthquake. *Bulletin of the Seismological Society of America*, 102(6):2436–2451

[J18] R. Guidotti, M. Stupazzini, **C.Smerzini**, R. Paolucci, and P. Ramieri (2011) Numerical study on the role of basin geometry and kinematic seismic source in 3D ground motion simulation of the 22 February 2011 M_W 6.2 Christchurch earthquake. *Seismological Research Letters*, 82(6):767–782.

[J19] **C.Smerzini**, R. Paolucci, and M. Stupazzini (2011) Comparison of 3D, 2D and 1D numerical approaches to predict long period earthquake ground motion in the Gubbio plain, Central Italy. *Bulletin of Earthquake Engineering*, 9(6):2007–2029.

[J20] F. Pacor, G. Ameri, D. Bindi, L. Luzi, M. Massa, R. Paolucci, and **C.Smerzini** (2011) Characteristics of strong ground motions from the L'Aquila (M_W = 6.3) earthquake and its strongest aftershocks. *Bollettino di Geofisica Teorica ed Applicata*, 52(3):471–490

[J21] **C.Smerzini**, R. Paolucci, and M. Stupazzini (2009) Experimental and numerical results on earthquake-induced rotational ground motions. *Journal of Earthquake Engineering*, 13(S1):66–82.

[J22] **C.Smerzini**, J. Avilés, R. Paolucci, and F. J. Sánchez-Sesma (2009) Effect of underground cavities on surface earthquake ground motion under SH wave propagation. *Earthquake Engineering and Structural Dynamics*, 38(12):1441–1460.

[J23] G. Ameri, M. Massa, D. Bindi, E. D'Alema, A. Gorini, L. Luzi, S. Marzorati, F. Pacor, R. Paolucci, R. Puglia, and **C.Smerzini** (2009) The 6 April 2009 M_W 6.3 L'Aquila (Central Italy) earthquake: strong-motion observations. *Seismological Research Letters*, 80(6):951–966.

[J24] L. Godinho, P. Amado Mendes, A. Tadeu, A. Cadena-Isaza, **C.Smerzini**, F. J. S´anchez-Sesma, R. Madec, and D. Komatitsch (2009) Numerical simulation of ground rotations along 2D topographical profiles under the incidence of elastic plane waves. *Bulletin of the Seismological Society of America*, 99(2B):1147–1161.

[J25] M. Stupazzini, J. de la Puente, **C.Smerzini**, M. Käser, H. Igel, and A. Castellani (2009) Study of rotational ground motion in the near-field region. *Bulletin of the Seismological Society of America*, 99(2B):1271–1286.

[J26] R. Paolucci and **C.Smerzini** (2008) Earthquake-induced transient ground strains from dense seismic networks. *Earthquake Spectra*, 24(2):453–470.

Conference Proceedings

[C1] D. Soler Sandoval, **C.Smerzini**, S. Corciulo, and O. Zanoli (2019) Time domain numerical modelling of offshore wind turbines seismic response. In *Proceedings of the 7th International Conference on Earthquake Geotechnical Engineering*, Rome, 17-20 June 2019

[C2] A. G. Özcebe, **C.Smerzini**, R. Paolucci, H. Pourshayegan, R. Rodríguez Plata, C. G. Lai, E. Zuccolo, F. Bozzoni, and M. Villani (2019) On the comparison of 3D, 2D, and 1D numerical approaches to predict seismic site amplification: the case of Norcia basin during the M6.5 2016 October 30 earthquake. In *Proceedings of the 7th International Conference on Earthquake Geotechnical Engineering*, Rome, 17-20 June 2019

[C3] R. Rodríguez-Plata, **C.Smerzini**, C. G. Lai, E. Zuccolo, A. G. Özcebe, and F. Bozzoni (2019) A comparative study on time domain 1D/2D seismic ground response analysis of Norcia basin during the M6.5 2016 October 30 earthquake. In *Proceedings of the 7th International Conference on Earthquake Geotechnical Engineering*, Rome, 17-20 June 2019

[C4] M. Stupazzini, A. Allmann, M. Infantino, R. Paolucci, **C.Smerzini**, I. Mazzieri, R. Guidotti, and P. Gardoni (2019) Footprint based PSHA: The case of Christchurch, New Zealand. In *Proceedings of the 2019 Pacific Conference on Earthquake Engineering*, Auckland, 4-6 Apr 2019

[C5] O. Odabasi, P. F. Bazzurro, M. Infantino, **C.Smerzini**, and M. Stupazzini (2019) Scenario-based probabilistic seismic performance analysis of an archetypal tall building in Istanbul using real and physics-based synthetic earthquake ground motions. In *Proceedings of the SECED 2019 Conference*, Greenwich, 9-10 Sept. 2019

[C6] P. F. Antonietti, A. Ferroni, I. Mazzieri, R. Paolucci, A. Quarteroni, **C.Smerzini**, and M. Stupazzini (2018) Numerical modeling of seismic waves by discontinuous spectral element methods. In *43-ème Congrès National d'Analyse Numérique, CANUM2016 – ESAIM Proceedings and Surveys* - ISSN:2267-3059 vol. 61

[C7] **C.Smerzini** (2018) Spatial variability of earthquake ground motion from 3D physics-based numerical simulations. In *Proceedings of the 16th European Conference on Earthquake Engineering*, Thessaloniki, 18-21 June 2018.

[C8] **C.Smerzini**, F. Cavalieri, S. Argyroudis, and K. Pitilakis (2018) 3D physics-based numerical modeling as a tool for seismic risk assessment of urban infrastructural systems: the case of Thessaloniki, Greece. In *Proceedings of the 16th European Conference on Earthquake Engineering*, Thessaloniki, 18-21 June 2018.

[C9] I. Mazzieri, L. Melas, **C.Smerzini**, and M. Stupazzini (2018) The role of near-field ground motion on seismic risk assessment in large urban areas. In *Proceedings of the 16th European Conference on Earthquake Engineering*, Thessaloniki, 18-21 June 2018

[C10] V. Bhanu, A.G. Özcebe, and **C.Smerzini** (2018) A study on vertical component of earthquake ground motion and its effect on a bridge. In *Proceedings of the 16th European Conference on Earthquake Engineering*, Thessaloniki, 18-21 June 2018

[C11] K. Hashemi, and **C.Smerzini** (2018) Comparison of 1D vs 2D vs 3D numerical approaches for prediction of seismic ground motion and site effects in Thessaloniki urban area. In *Proceedings of the 16th European Conference on Earthquake Engineering*, Thessaloniki, 18-21 June 2018

[C12] M. Infantino, R. Paolucci, **C.Smerzini**, and M. Stupazzini (2018) Study of the Spatial Correlation of Earthquake Ground Motion By Means of Physics-Based Numerical Scenarios. In *Proceedings of the 16th European Conference on Earthquake Engineering*, Thessaloniki, 18-21 June 2018

[C13] M. Infantino, R. Paolucci, and **C.Smerzini** (2018) Analysis of the spatial correlation of earthquake ground motion from physics-based numerical simulations. In *Proceedings of the 2nd Workshop: Best Practices in Physics-based Fault Rupture Models for Seismic Hazard Assessment of Nuclear Installations: issues and challenges towards full Seismic Risk Analysis*, Cadarache, 14-16 May 2018

[C14] R. Paolucci, I. Mazzieri, A.G. Özcebe, **C.Smerzini**, M. Stupazzini, and M. Infantino (2017) 3D physics-based earthquake scenarios in Istanbul for seismic risk assessment. In *Proceedings of the 16th World Conference on Earthquake Engineering (16WCEE)*, number Paper N. 1478, Santiago, Chile, January 9–13 2017

[C15] M. Stupazzini, M. Infantino, A. Allmann, M. K¨aser, R. Paolucci, I. Mazzieri, and **C.Smerzini** (2017) PSHAe (Probabilistic Seismic Hazard Assessment enhanced): the case of Istanbul. In *Proceedings of the 16th World Conference on Earthquake Engineering (16WCEE)*, number Paper N. 1631, Santiago, Chile, January 9–13 2017

[C16] M. Stupazzini, M. Infantino, A. Allmann, M. Käser, I. Mazzieri, A.G. Özcebe, R. Paolucci, and **C.Smerzini** (2016) Near-fault earthquake ground-motion simulation in the Istanbul area. In *Proceedings of the 5th IASPEIIAEE International Symposium: Effects of Surface Geology on Seismic Motion (ESG5)*, Taipei, Taiwan, August 15–17 2016

[C17] **C.Smerzini**, K. Pitilakis, and K. Hashemi (2016) 3D numerical modelling of the seismic response of the Thessaloniki urban area: the case of the 1978 Volvi earthquake. In *Bulletin of the Geological Society of Greece – Proceedings of the 14th International Conference of the Geological Society of Greece (EGE2016)*, Thessaloniki, Greece, May 25-27 2016

[C18] O. Zanoli, **C.Smerzini**, and E.J. Parker (2016) Vertical input for seismic analysis of offshore structures. In *Proceedings of the 2016 Offshore Technology Conference (OTC 2016)*, number OTC-27140-MS, Houston, Texas, USA, May 2-5 2016

[C19] K. Hashemi, I. Mazzieri, R. Paolucci, and **C.Smerzini** (2015) Spatial variability of near-source seismic ground motion with respect to different distance metrics, with special emphasis on May 29 2012 Po Plain Earthquake, Italy. In *Proceedings of the 7th International Conference on Seismology and Earthquake Engineering (SEE7)*, Tehran, Iran, May 18-21 2015

[C20] M. Stupazzini, A. Allmann, M. Käser, I. Mazzieri, A.G. Özcebe, R. Paolucci, and **C.Smerzini** (2015) PSHAe (Probabilistic Seismic Hazard Analysis enhanced): the case of Istanbul. In *Proceeding of the 10th Pacific Conference on Earthquake Engineering (10PCEE)*, Syndney, Australia, November 6-8 2015

[C21] **C.Smerzini**, I. Mazzieri, and R. Paolucci (2015) 3D physics-based numerical simulations of the MW6 May 29 2012 Emilia earthquake. In *Proceedings of the Workshop on Best Practices in Physics-based Fault Rupture Models for Seismic Hazard Assessment of Nuclear Installations (BestPSHANI)*, Vienna, Austria, November 18-20 2015

[C22] M. G. Mulas, R. Pantalena, **C.Smerzini**, and D. Coronelli (2014). The assessment of an existing RC framed structure: a case study on a collapsed building. In *Proceedings of the IX International Conference on Structural Dynamics (EURODYN 2014)*, Porto, Portugal, June 30 - July 2 2014

[C23] R. Paolucci, M. Stupazzini, P. F. Antonietti, R. Guidotti, I. Mazzieri, **C.Smerzini**, and M. Beretta (2013). Deterministic seismic scenarios from 3D numerical simulations. In *Proceedings of the Vienna Congress on Recent Advances in Earthquake Engineering and Structural Dynamics 2013 (VEESD 2013)*, number 255, Vienna, Austria, August 28-30 2013

[C24] R. Guidotti, M. Stupazzini, **C.Smerzini**, and R. Paolucci (2012). The 22 February 2011 MW 6.3 Christchurch earthquake: 3D numerical simulations of strong ground motion. In *Proceedings of the 2nd International Conference on Performance Based Design in Earthquake Engineering (IIPBD)*, Taormina, Italy, May 28-30 2012

[C25] **C.Smerzini**, M. Villani, E. Faccioli, and R. Paolucci (2012). 3D numerical simulations in complex near-field geological configurations during the MW 6.3 L'Aquila earthquake. In *Proceedings of the 15th World Conference on Earthquake Engineering (15WCEE)*, number 2362, Lisbon, Portugal, September 24-28 2012

[C26] **C.Smerzini**, R. Paolucci, C. Galasso, and I. Iervolino (2012). Engineering ground motion selection based on displacement-spectrum compatibility. In *Proceedings of the 15th World Conference on Earthquake Engineering (15WCEE)*, number 2354, Lisbon, Portugal, September 24-28 2012

[C27] J. R. Abraham and **C.Smerzini** (2012). Observed and simulated ground motions in the Gubbio basin, Central Italy during the MW 5.7 1984 earthquake. In *Proceedings of the 15th World Conference on Earthquake Engineering (15WCEE)*, number 3684, Lisbon, Portugal, September 24-28 2012

[C28] C. Cauzzi, D. F¨ah, V. Pessina, E. Faccioli, and **C.Smerzini** (2012). Topographic amplification from recorded earthquake data and numerical simulations. In *Proceedings of the 15th World Conference on Earthquake Engineering (15WCEE)*, number 2341, Lisbon, Portugal, September 24-28 2012

[C29] R. Paolucci and **C.Smerzini** (2011). 3D numerical simulations of earthquake ground motion in sedimentary basins: the cases of Gubbio and L'Aquila, Central Italy. In *Proceedings of the 4th IASPEI–IAEE International Symposium on the Effects of Surface Geology on Seismic Motion*, Santa Barbara, USA, August 23-26 2011

[C30] I. Mazzieri, **C.Smerzini**, Paola F. Antonietti, F. Rapetti, M. Stupazzini, R. Paolucci, and A. Quarteroni (2011). Non-conforming spectral approximations for the elastic wave equation in heterogeneous media. In *ECCOMAS Thematic Conference: 3rd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2011)*, Corfù, Greece, May 26-28 2011

[C31] **C.Smerzini**, M. Stupazzini, and R. Paolucci (2011). Numerical simulation of seismic response at Gubbio basin, Central Italy. In *Proceedings of the 5th International Conference on Earthquake Geotechnical Engineering (5ICEGE)* Santiago, Chile, January 10-13 2011

[C32] R. Paolucci and **C.Smerzini** (2010) Strong ground motion in the epicentral region of the MW 6.3 Apr 6 2009, L'Aquila earthquake, Italy. In *Proceedings of the 5th International Conference on Recent advances in Geotechnical Earthquake Engineering and Soil Dynamics*, number, EQ4, San Diego, California, USA, May 24-29 2010

[C33] E. Faccioli, M. Vanini, M. Villani, C. Cauzzi, and **C.Smerzini** (2010). Mapping seismic hazard to account for basin amplification effects. In *Proceedings of the 9th International Workshop on Seismic Microzoning Risk Reduction*, Cuernavaca, México, February 21-24 2010

[C34] **C.Smerzini**, J. Avilés, F. J. Sánchez-Sesma, and R. Paolucci (2008). Analytical solutions for the seismic response of underground structures under SH wave propagation. In *Proceedings of the 2008 Seismic Engineering International Conference commemorating the 1908 Messina and Reggio Calabria Earthquake (MERCEA 2008)*, volume I, pages 674–683, Reggio Calabria, Italy, July 8-11 2008

[C35] L. Scandella, **C.Smerzini**, and R. Paolucci (2008). Experimental and numerical study on earthquake-induced ground strains. In *Proceedings of the 14th World Conference on Earthquake Engineering*, number 06-0009, Beijing, China, October 12-17 2008

[C36] **C.Smerzini**, E. Faccioli, R. Paolucci, L. Scandella, and W.R Stephenson (2006). Surface ground strains evaluated from weak motion records of dense seismograph arrays: the case of Parkway Valley, New Zealand. In *Proceeding of the 1st European Conference on Earthquake Engineering and Seismology (1ECEES)*, number 879, Geneve, Switzerland, September 3-8 2006

Book Chapters

[B1] R. Paolucci, M. Infantino, I. Mazzieri, A.G. Özcebe, **C.Smerzini**, M. Stupazzini (2018). 3D physics-based numerical simulations: advantages and current limitations of a new frontier to earthquake ground motion prediction. The Istanbul case study. In *Pitilakis K. (eds) Recent Advances in Earthquake Engineering in Europe. ECEE 2018. Geotechnical, Geological and Earthquake Engineering*, vol 46. Springer

[B2] R. Paolucci, I. Mazzieri, **C.Smerzini**, and M. Stupazzini (2014). Physics-based earthquake ground shaking scenarios in large urban areas. In *A. Ansal, editor, Perspectives on European Earthquake Engineering and Seismology, Geotechnical, Geological and Earthquake Engineering*, volume 34. Springer.

Professional and Forensic Consulting

[R1] Consulting activity for the Court of Rieti within the trial for the collapse of a bell tower during the 24 Aug, 2016 Amatrice earthquake.

[R2] SOIL Srl (2016). Mamba Field - Export Pipeline, Seismic Local Site Response Analysis, Geotechnical and Geohazard Supporting Studies, Mozambique Program. Consulting activity for the company SOIL Srl with the aim of performing site-specific site response analyses and of defining the design response spectra at the gas-fields for the export pipeline and deepwater subsea structures, for the ENI Mozambique Project, Eastern Africa.

[R3] SOIL Srl (2015). Probabilistic Seismic Hazard Assessment, Mamba Straddling Resources, Mozambique Program. Consulting activity for the company SOIL Srl with the aim of providing Probabilistic Seismic Hazard Assessment (PSHA) at the onshore plant and the related nearshore structures, the pipeline corridor (onshore, nearshore and offshore) and the offshore Mamba and Coral fields, for the ENI Mozambique Project, Eastern Africa.

[R4] Procedimento Penale R.G. n. 392/11 – Edificio 11 – Via Gabriele D'Annunzio 24/26. Technical report for the Criminal Court of L'Aquila (2013). Scientific activity carried out as a member of the academic team appointed by Prof. M.G. Mulas, in quality of scientific consultant of the legal authority, for the Criminal Court of L'Aquila with the aim of investigating the causes and the mechanism of the collapse of the building located in Via G. D'Annunzio 24/26 during the April 6, 2009 L'Aquila earthquake.

[R5] R. Paolucci and C. Smerzini (2009). Valutazione dell'effetto di un parcheggio sotterraneo sul moto sismico risentito nell'area di Via XX settembre 79, L'Aquila. Technical report for the Public Prosecutor's Office of L'Aquila. Consulting activity for the Public Prosecutor's Office of L'Aquila with the objective of analyzing the role of an underground parking on the earthquake ground shaking within the area of Via XX settembre 79, where a RC building collapsed during the April 6, 2009 L'Aquila earthquake.

Seminars and Conference

Invited Seminars and Lectures

- "*On the use of 3D physics-based ground motion simulations for seismic hazard and risk assessment*". Department of Civil and Environmental Engineering, Politecnico di Milano, Jun. 26, 2019.
- "*Future challenges in seismic hazard and risk assessment: 3D physics-based numerical simulations of earthquake ground motion*". Department of Civil Engineering, University College London (UCL), Jan. 21, 2019, Invited seminar by Prof. C. Galasso.

- "*Gli effetti di sito nella valutazione delle azioni sismiche di progetto*" within the Short Course *Pericolosità Sismica e Azioni Sismiche di Progetto (con riferimento alle NTC 2018 e circolare 2019)*, organized by ATE association (Associazione Tecnologi per l'Edilizia), May 22, 2019.
- "*3D physics-based numerical simulations of earthquake ground motion in the Thessaloniki urban area: application to seismic hazard and risk analyses*". Department of Civil Engineering, Aristotle University of Thessaloniki AUTH, Thessaloniki, Greece, Dec. 17, 2015. Invited seminar by Prof. K. Pitilakis.
- "*SPEED: a high-performance spectral element code for multi-scale earthquake ground shaking scenarios*". Department of Civil Engineering, Aristotle University of Thessaloniki (AUTH), Thessaloniki, Greece, Mar. 6, 2015. Invited seminar by Prof. K. Pitilakis.
- "*Vertical Input Spectra for Structural Analyses of Offshore Structures*". Invited lecture given at the company D'Appolonia S.p.A., Geosciences Division, Genova, Italy. Nov. 13, 2014. Invited lecture by E. J. Parker.
- "*SPEED-Spectral Elements in Elastodynamics: a Non-Conforming Approach for Engineering Seismology and Earthquake Engineering Applications*". HP14 Research Seminar Structural Mechanics, Department of Civil Engineering of KU Leuven, Belgium, Jan. 17, 2014. Invited seminar by Prof. G. Degrande.
- "*Broadband Numerical Simulations in Complex Near-Field Geological Configurations: the Case of the M_W 6.3 L'Aquila Earthquake*". Charles University of Prague, Department of Geophysics, Faculty of Mathematics, Nov. 9, 2014. Invited seminar by Prof. Frantisek Gallovič.

Invited Conference Talks

- "*3D numerical simulation of induced earthquakes in the Groningen gas field*", Joint conference 14th World Congress in Computational Mechanics (WCCM) - ECCOMAS Congress 2021, Virtual.
- "*Physics-based Numerical Simulation of Earthquake Ground Motion through a High-Performance Spectral Element Code: the case of Thessaloniki, Northern Greece*", IV ECCOMAS Young Investigator Conference – YIC 2017, Milan, Italy, Sept. 13 – 15, 2017.
- "*On the comparison between physics-based numerical simulations and observations from real earthquakes*". European Geosciences Union General Assembly 2016 (EGU 2016), Session NH4.5/SM2.7 Fault2SHA "Common practices and new hints towards physics-based and testable PSHA", Vienna, Austria, April 17 – 22, 2016.
- "*3D physics-based numerical simulations of the M_W 6.0 May 29 2012 Emilia Earthquake*". International Workshop on Best Practices in Physics-based Fault Rupture Models for Seismic Hazard Assessment of Nuclear Installations (BestPSHANI), Vienna, Austria, Nov. 19, 2014.
- "*3D ground motion simulation of the M_W 6.2 Christchurch earthquake*". 2nd International Conference on Performance-Based Design in Earthquake Engineering (IIPBD), Taormina, Italy, May 28 – 30, 2012.

Conference and workshop organization

- Chair of the thematic session "*Hazard impact*" of the EPOS-IT Workshop on Earthquake Hazard, Dec. 1 – 3, 2020. Virtual.
- Member of the organizing committee of the mini-symposium "*Advances in the numerical simulation of multi-scale seismic wave propagation* " within the 2021 SIAM Conference on Mathematical and Computational Issues in Geosciences, Milano, June 21–24, 2021.
- Member of the organizing committee of the mini-symposium "*Recent Advances in numerical methods for seismic wave propagation*" within the 2019 ECCOMAS Young Investigator Conference, Krakow, Poland, Sept. 1–6, 2019.

Contributed Conference Talks

- "*Spatial variability of earthquake ground motion from 3D physics-based numerical simulations*". 16th European Conference on Earthquake Engineering, Thessaloniki, June 18 – 21, 2018.
- "*3D physics-based numerical modeling as a tool for seismic risk assessment of urban infrastructural systems: the case of Thessaloniki, Greece*". 16th European Conference on Earthquake Engineering, Thessaloniki, June 18 – 21, 2018.
- "*Spatial variability of earthquake ground motion from dense-array observations and 3D numerical simulations*". 6th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering – COMPDYN, Rhodes Island, Greece, June 15 – 17, 2017.
- "*Deterministic seismic scenarios from 3D numerical simulations*". Vienna Congress on Recent Advances in Earthquake Engineering and Structural Dynamics (VEESD2013), Vienna, Austria, Aug. 28 – 30, 2013.
- "*3D numerical simulations in complex near-field configurations during the M_W 6.3 L'Aquila earthquake*". 15th World Conference on Earthquake Engineering (15WCEE), Lisbon, Portugal, Sept. 24 – 28, 2012.
- "*3D ground motion simulation of the M_W 6.2 Christchurch earthquake*". 2nd International Conference on Performance-Based Design in Earthquake Engineering (IIPBD), Taormina, Italy, May 28 – 30, 2012.
- "*Numerical simulations of seismic response at Gubbio basin, Central Italy*". 5th International Conference on Earthquake Geotechnical Engineering (5ICEGE), Santiago, Chile, Jan. 10 – 13 2011.
- "*The earthquake source in numerical modeling of seismic wave propagation in heterogeneous Earth media*". 11th International ROSE School Seminar, Pavia, Italy, May 19 – 20, 2011.
- "*1D, 2D and 3D numerical modeling of seismic site response: the case of Gubbio basin*". Final Meeting of the Seismological Projects, 2007-2009 DPC-INGV agreement, Rome, Italy, June 30 – July 2, 2010.
- "*Experimental and numerical study on earthquake-induced ground strains*". 14th World Conference on Earthquake Engineering (14WCEE), Beijing, China, Oct 12 – 17, 2008.
- "*Analytical solutions for the seismic response of underground structures under SH wave propagation*". International Conference on Earthquake Engineering commemorating the 1908 Messina and Reggio Calabria Earthquake (MERCEA08), Reggio Calabria, Italy, July 8 - 11, 2008.
- "*Earthquake-induced transient ground strains and rotations from dense seismic networks*". 8th International ROSE School Seminar, Pavia, Italy, May 22 – 23, 2008.

Bibliometric Indices

Scopus (last accessed Dec. 2020)

- H-index: 13
- Total number of documents: 31
- Total number of citations: 605
- Total number of citations excluding self-citations: 541

Referee Activities

- *International Journals*
  Earthquake Spectra; Bulletin of Earthquake Engineering; Journal of Earthquake Engineering; Soil Dynamics and Earthquake Engineering; Bulletin of the Seismological Society of America; Geophysical Journal International; Journal of Seismology; Pure and Applied Geophysics; Annals of Geophysics; KSCE Journal of Civil Engineering; Solid Earth Discussions; Earthquake Engineering and Engineering Vibration; Geosciences; Encyclopedia of Earthquake Engineering; Earthquakes and Structures; European Journal of Environmental and Civil Engineering

- *Conference Proceedings*
  Proceedings of 16th International Conference of Earthquake Engineering; Proceedings of 7th International Conference on Earthquake Geotechnical Engineering.

Main Research interests

- Development of advanced numerical approaches based on Spectral Elements for earthquake ground motion prediction;
- Physics-based numerical simulations of earthquake ground motion for seismic hazard and risk assessment in urban areas and for strategic structures;
- Characterization of earthquake ground motion in near-source conditions and in complex geological configurations;
- Definition of seismic actions for design;
- Spatial variability of earthquake ground motion and its impact on engineered structures.

Milano, December, 2020

Sincerely,