Sonia Giovinazzi
CURRICULUM VITAE

EDUCATION

2005 Ph.D in *Risk Management of Natural and Anthropogenic Hazards on the Built Environment* at the Technical University of Braunschweig (Germany), Civil Engineering Department and University of Florence (Italy), Civil and Environmental Engineering Department. Thesis: *"The Vulnerability Assessment and the Damage Scenario in Seismic Risk Analysis"*

1999 Laurea* in Civil, Geotechnical, Engineering at the University of Genoa (Italy)
Thesis: "*Models for the seismic vulnerability analysis of churches*"
(*5 years degree, equivalent to BE+ME plus thesis).

1993 High School Diploma from the Scientific Lyceum "Giordano Bruno" Albenga (Italy)

EMPLOYEMENT

2016-Present **Adjunct Professor** at University of Rome La Sapienza, Italy

2014-Present **Senior Research Fellow** at the Department of Civil and Natural Resources Engineering, University of Canterbury, New Zealand

2009-2015 **Lecturer** at the Department of Civil and Natural Resources Engineering, University of Canterbury, New Zealand

2007-2013 **Research Fellow** at the Department of Civil and Natural Resources Engineering, University of Canterbury, New Zealand

2005-2007 **Research Fellowship/Lecturer position** at the Department of Structural and Geotechnical Engineering, University of Genoa, Italy

2002-2004 **Ph.D. Student** at Doctoral program jointly organized by the Technical University of Braunschweig (Germany) and by the University of Florence (Italy)

1999-2002 **Research Fellowship** at the Department of Structural and Geotechnical Engineering, University of Genoa, Italy

RESEARCH TOPICS

Risk management and mitigation strategies

- Real-time damage scenario
- Emergency management plans
- Scenarios for assessing and comparing alternative risk mitigation and resilience enhancement strategies (e.g. structural, non-structural risk-transferring strategies, etc.)
- Risk awareness and communication of risk to end-users and communities
- Post-disaster reconstruction

Support to decision-making processes

- Cost-benefit analysis
- Multi-criteria decision analysis, MCDA
- Casual-loop diagrams
- Input-Output, I-O economics and Computable General Equilibrium, CGE, models (basics)

Multi-hazard risk analysis for portfolio of buildings and distributed infrastructures

- Probability and Statistics
- Monte Carlo simulations
- Fuzzy-set theory and Logic
- Fault Tree and System Analysis
- Geographical Information Systems
- Inventory databases and tools for data collection including remote sensing
- Consequence and impact models
- Functionality restoration models and resilience curves
- Earthquake-induced site effect amplifications and geotechnical secondary hazards (e.g. liquefaction): simplified approaches for modeling for inclusion into probabilistic and deterministic hazard analysis
- Fragility models for classes of buildings and components of distributed infrastructures: mechanical-based (i.e. analytical); observational-based (i.e. empirical) and expert-opinion based approaches
- Procedures for cross-correlation and calibration of different fragility models and vulnerability approaches

Assessment, analysis and retrofit for existing structures

- Nonlinear Static and Dynamic Procedures for assessing the seismic vulnerability of single structures
- Lumped plasticity and macro-element approaches for modeling the seismic behavior of structures
- Damping factors and definition of equivalent SDOF systems for modeling the seismic behavior of masonry buildings
- Kinematic and partial collapse mechanisms for modeling the seismic behavior of monumental buildings
- In-situ diagnosis tests for existing structures
- Feasibility and practical implementation of retrofit solutions for existing buildings
- Development of guidelines for the empirical vulnerability assessment of existing buildings
- Development of survey forms for assessing of seismic damage for heritage and monumental buildings (i.e. contribution to the synthetic survey form that has been officially adopted by the National Civil Protection Department and by the Fine Art Italian Ministry, Gazzetta Ufficiale n. 55, 7 March 2006).

RESEARCH PROJECTS

Research projects granted and carried out as Principal Investigator

- **UoC Principal Investigator (PI)** and Senior Scientist of the project "*An operational framework to determine the seismic resilience of New Zealand churches"* funded by the QuakeCoRE, NZ Centre for Earthquake Resilience - NZ$ 22,000 (1 year project Jan 2017 - Dec 2017)

- **Principal Investigator (PI)** of the project *"Linking building properties and damage to earthquake-induced business' downtime"* funded by the QuakeCoRE, NZ Centre for Earthquake Resilience - NZ$ 28,400 (1 year project from Jan 2016 - Dec 2016)

- **Principal Investigator (PI)** of the project *"Performance of the Telecommunication Network during the Canterbury Earthquake Sequence"* funded by the QuakeCoRE, NZ Centre for Earthquake Resilience - NZ$ 13,700 (1 year project Jan 2016 - Dec 2016)

- **Principal Investigator (PI)** of the project *"Decision Support System for Post-Earthquake Rehabilitation of Sewerage Systems: A Project Management Perspective"* funded by the Earthquake Commission of New Zealand (EQC) - NZ$ 50,000 (2 years project from 2014-2016)

- **UoC Principal Investigator (PI)** and Senior Scientist of the project *"Vulnerability Analysis of Unreinforced Masonry Churches"* funded by the Earthquake Commission of New Zealand, EQC - NZ$ 19,200- (3 years project from 2013 to 2015)

- **UoC Principal Investigator (PI)** and Senior Scientist of the project *"Economics of Resilient Infrastructure"* funded by the Minister of Business, Innovation and Employment, MBIE - NZ$ 105,708 (4 years project from 2012 to 2016)

- **UoC Principal Investigator (PI)** and Co-Principal Investigator of the joined UoC-GNS Science project "*Projecting Damage and Losses for Buildings and Infrastructure from the Canterbury Earthquake Sequence"* funded by Natural Hazard Research Platform, NHRP, of New Zealand - NZ$ 219,130 (3 years project from 2012 to 2015)

- **Principal Investigator (PI)** of the project *"Earthquake-flood Multihazard Impacts on Lifeline Systems Following the Canterbury Earthquake Sequence 2010-2011"* funded by Natural Hazard Research Platform, NHRP, of New Zealand and co-funded by multiple private stakeholders organizations including asset managers and local authorities - NZ$ 64,000 (2 years project from 2012 to 2014)

- **Principal Investigator (PI)** of the project *"Recovery of Lifelines"* funded by Natural Hazard Research Platform, NHRP, of New Zealand - NZ$ 130,000 (6 months project from May to November 2011)

- **Principal Investigator (PI)** of the project *"Temporary Housing Issues"* funded by Natural Hazard Research Platform, NHRP, of New Zealand - NZ$ 31,000 (6 months project from May to November 2011)

- **Principal Investigator (PI)** of the project *"Hospital Services and Functions"* funded by Natural Hazard Research Platform, NHRP, of New Zealand - NZ$ 20,000 (6 months project from May to November 2011)

- **Principal Investigator (PI)** of the project "*Enhancing the seismic performance of lifelines systems through resilience allocation and optimization*" funded by Royal Society of New Zealand", ISAT, Joint EU/NZ Annual Research Project (from 2009 to 2010)

- **Co-principal Investigator** of the project **"***Benchmarking the readiness of Road Controlling Authorities to meet their obligations under the CDEM Act 2002*" funded by Land Transport New Zealand (LTNZ) – (2 years project from 2008 to 2010)

- **Principal Investigator (PI)** *"Vulnerability models for seismic risk analysis: GIS implementation and validation on the basis of historical data",* Annual Research Project funded by University for Young Researcher (from January 2001 to December 2001)

Collaboration in research projects

- **Research Collaborator** of the project "*APhoRISM: Advanced procedures for volcanic and seismic monitoring"* funded by the *European Commission* under the theme FP7-SPACE-2013-1 (3 years project from 2013 to 2016)

- **Project Scientist** of the project *"R6 - Reti di distribuzione e utilità (i.e. Distribution networks and services)"* funded by ReLuiS Network of Seismic Engineering University Laboratories, Italian Department of Civil Protection – (3 years project from 2014 to 2018)

- **Research Collaborator** of the project *"SYNER-G: Systemic Seismic Vulnerability and Risk Analysis for Buildings, Lifeline Networks and Infrastructures Safety Gain"* funded by the *European Commission* under the framework FP7 (3 years project from 2009 to 2012)

- **Project Scientist** of the project *"A diagnosis of Transit NZ decision-making during emergency events", annual Research Project"* funded by Land Transport New Zealand, LTNZ, former Transit New Zealand - (1 year project from 2008 to 2009)

- **Research Collaborator** of the project "*Definition and development of databases for the evaluation and the planning of risk and for the emergency management*", funded by the ReLuiS Network of Seismic Engineering University Laboratories – Italian Department of Civil Protection – (3 years project from 2005 to 2007)

- **Research Collaborator** of the project "*Resilient Organisation Programme"* funded by the Foundation of Research Science and Technology (FRST) – (6 years project from 2004 to 2010)

- **Assistant Project Scientist** of the project *"Definition of the seismic input on the basis of the expected displacements"*, funded by the National Institute of Geophysics and Vulcanology, Department of Civil Protection (ProCiv-INGV 2004-06) – (2 years project from 2004 to 2006)

- **Assistant Project Scientist** of the project *"Earthquake scenario in Western Liguria, Italy, and strategies for the preservation of historic centres"* funded by the National Institute of Geophysics and Vulcanology, Italian Department of Civil Protection - (2 years project from 2002 to 2004)

- **Assistant Project Scientist** of the project *"Risk-UE: An advanced approach to earthquake risk scenarios with applications to different Europeans towns"* funded by the European Commission under: FP5-EESD – (3 years project from 2001 to 2004)

- **Assistant Project Scientist** of the project "*GE.RI.A Project: Environmental Risk Management*". Biannual INTERREG France–Italy funded by the European Commission - (2 years project from 2000 to 2002)

TEACHING AND SUPERVISON OF Ph.D STUDENTS

2016- Present, **Adjunct Professor** at Sapienza, University of Rome, Architecture Faculty, for the *undergraduate course (in English) "Structural Engineering of Ancient and Modern Structures"* after competitive selection

2016-present, **External Examiner** for the *Doctoral Programme in Understanding and Managing Extremes*, IUSS Pavia

2013-Present, **Co-supervisor of PhD candidates**

Kongar Indranil, at University College London (2013-present), PhD topic *"Seismic risk assessment of interdependent urban critical infrastructure systems"* (successfully completed).

Obinna Akaa, at UC, PhD topic *"Balancing stakeholders goals in structural design of steel framed buildings"* (2014 - present)

Ashi Ezz, at UC, PhD topic *"An integrated post-disaster risk management model for infrastructure projects"* (2014 - present)

2012-Present, **Primary supervisor of PhD candidates** undertaking the PhD programme of Civil Engineering at the University of Canterbury (UC), New Zealand

Liu Miao, at UC, PhD topic *"Decision Support System for Post-Earthquake Rehabilitation of Sewerage Systems: a project management perspective"* (successfully completed)

Adnan Rais, at UC, PhD topic "*Integrated Bridge Utility Systems: Performance Based Assessment and Mitigation of Earthquake Induced Physical and Functional Impacts"* (2014-present)

2009- 2015, **Lecturer**, at Department of Civil and Natural Resources Engineering, University of Canterbury, New Zealand, for the post-graduate *Masters Course "Risk Management"*

SCOLARSHIPS, FELLOWSHIPS and AWARDS

2010 - **Visiting Researcher** at Analysis and Monitoring of Environmental Risks, AMRA, Scarl Research Institute, Naples, Italy

2006 - **Visiting Researcher** for three month periods at the Department of Civil and Natural Resources Engineering, University of Canterbury, New Zealand

2006 - **Award** for *"Excellent Contributions to Young Scientists"* for the work *"SCENARIO SISMICO: a tool for seismic risk analysis and real time damage scenarios implementation",* ECEES, Europe.

2004 - **Internship** at Munich Re Company, Munich, Germany

2002 - **Receipt of Ph.D Scholarship** from Italian Ministry for Education, based on CV, plus written and oral exams

MEMBERSHIPS

2015 - **Selected Member** of the *2015 FRIENZ delegation.* FRIENZ, Facilitating Research and Innovation co-operation between Europe and New Zealand, is a joint initiative between

the New Zealand Ministry of Business, Innovation and Employment (MBIE) and the European Commission (EC) through the seventh research Framework Programme (FP7)

2014 - **Leader** of the New Zealand team for the *Geotechnical Extreme Event Reconnaissance, GEER***,** after the 4th March flooding events in Christchurch in 2014

2013 - **New Zealand Member** for the reconnaissance held by the *Global Facility for Disaster Reduction and Recovery, GFDRR*, and the World Bank in Christchurch in 2013 in the framework of the 'Learning from Earthquakes, LFE' initiative supported by the Earthquake Engineering Research Institute, EERI

2013 to Present - **Member** of the *Infrastructure Resilience Division IRD,* Technical Group of the American Society of Civil Engineering, ASCE

2013 to Present - **Founder** partner and **Member** of the *"ERGO Multi-Hazard Assessment, Response and Planning" Consortium*

2009 to Present - **Member** of the *NZ Society of Earthquake Engineering, NZSEE*

2009 to Present - **Member** of the *NZ Society for Risk Management, NZSRM*

ORGANIZATION OF CONFERENCES

2011-2013-2015, **Organizer** and **Chair** for *"Lifeline week: Resilient Infrastructures for Resilient Communities"* one week-long workshop events to foster research uptake, connections, two-way discussions on infrastructure resilience among researchers, stakeholders, decision-makers, and the wider community. (Christchurch, in 2011 and 2013; Rome Italy, in 2015). https://sites.google.com/site/resilientinfrastructures/home

2008, **Co-Organizer** for "*4th International I-Rec Conference on Building Resilience, achieving effective post-disaster reconstruction*" (Christchurch, New Zealand, April/May 2008)

2004, **Member of the organizing committee** for *"XI ANIDIS, Italian Conference on Earthquake Engineering"* (Genoa, Italy, January 2004)

2004, **Member of the organizing committee** for the Italian Conference on *"Seismic Risk, Built-up environment and Historical Centers"* (Sanremo, Italy, July 2004)

INTERNATIONAL JOURNAL REVIEWER (selected)

- Earthquake Spectra
- Soil Dynamics and Earthquake Engineering
- Earthquake Engineering and Structural Dynamics
- Bulletin of Earthquake Engineering
- Journal of Earthquake Engineering
- Policy Sciences
- Sustainable and Resilient Infrastructure
- International Journal of Project Management
- Scientific Research and Essays

PROFESSIONAL/CONSULTING ACTIVITIES

2000-present **Chartered Professional Engineer in Italy**

2007/2016 **Consultant** for **Fondazione Prato Ricerche,** Research Institute, Italy, in collaboration with **ENEA,** Italian National Agency for New Technologies, Energy and Sustainable Economic Development

Vulnerability analysis and damage scenario assessment for different municipalities in the Tuscany Region, Italy; to inform the definition of emergency management plans and mitigation strategies.

2012 - **Consultant** for **Canterbury Earthquake Recovery Authority**, National Government Agency, New Zealand.

Identification and critical analysis of modelling tools to support post-disaster reconstruction decision-making process for: allocation and prioritisation of resources; integration of analysis; clear visualisation (GIS based) to articulate issues and alternative strategies.

2012 – **Consultant** for **Resilient Organisations** - Research Organisation, New Zealand

Contribute to the input paper prepared for 2015 Global Assessment Report on Disaster Risk Reduction and the United Nation Office for Disaster Risk Reduction (UNISDR) on "Lessons from the 2011 Christchurch earthquake and Great Eastern Japan earthquake and tsunami"

2008 – **Consultant** for **GNS Science**, and **Earthquake Commission EQC**, respectively Research Institute and National Government Agency in New Zealand

Contribute to the assessment of "Multi-hazards performance of geographically distributed systems", to provide the FRST- funded "RiskScape" platform with an engineering basis upon which the losses incurred by selected geographically distributed lifeline systems can be assessed under the action of different natural hazards.

2004/2005 - In-situ tests and technological survey for the static safety and the seismic vulnerability assessment of the public schools in Savona (Italy) municipality

2003/2004 - Damage and vulnerability survey of heritage and monumental buildings after April 2003 Piemonte (Italy) and December 2004 Salò, Brescia (Italy) earthquakes

1997 - Damage and vulnerability survey of residential buildings in the historical centre of Roccanolfi di Preci (Perugia, Italia) after September 1997 Umbria-Marche earthquake

DEVELOPED SOFTWARE

2005 - **SCENARIO SISMICO** end-user software package to evaluate real-time damage scenarios following an earthquake event. *Intellectual Property - Lagomarsino, A. Balbi, A. Galasco, S.* ***Giovinazzi****, S. Parodi, University of Genoa*.

2000 - **PROGRAMMA CHIESE** end-user software for the vulnerability analysis for heritage or monumental buildings. *Intellectual Property - Lagomarsino S., Brun S.,* ***Giovinazzi S****., Resemini S., Rossi B., Idri C., Panetta M., Penna A., Podestà S, Toselli F., University of Genoa.*

PUBLICATIONS

Journal articles (peer-reviewed)

Akaa, O. U., Abu, A., Spearpoint, M., and Giovinazzi, S. (2016). Group-analytic network process for balancing stakeholder views on fire protection of steel-framed buildings. *Journal of Multi‐Criteria Decision Analysis,* 2017*,* pp. 1–15.

Vecere A, Monteiro R, Ammann W J, **Giovinazzi** S, Melo Santos R H (2017). Predictive models for post disaster shelter needs assessment. *International Journal of Disaster Risk*

Reduction, 21, pp. 44-62.

Kongar, I., Esposito, S., **Giovinazzi**, S., (2017). Post-earthquake assessment and management for infrastructure systems: learning from the Canterbury (New Zealand) and L'Aquila (Italy) earthquakes. *Bulletin of Earthquake Engineering*, 15(2), pp. 589-620.

Kongar, I., **Giovinazzi**, S. & Rossetto, T. (2016). Seismic performance of buried electrical cables: evidence-based repair rates and fragility functions. *Bulletin of Earthquake Engineering,* pp. 1-31, doi:10.1007/s10518-016-0077-3 (in press).

Kongar I, Rossetto T, **Giovinazzi** S (2016). Evaluating Simplified Methods for Liquefaction Assessment for Loss Estimation. *Natural Hazards and Earth System Sciences Discussions,* doi:10.5194/nhess-2016-281 (in press).

Akaa, O. U., Abu, A., Spearpoint, M., and **Giovinazzi**, S. (2016). Group-AHP Decision Analysis for the selection of applied fire protection to steel structures. *Fire Safety Journal,* 86, pp. 95–105.

Cavalieri F., Franchin P., **Giovinazzi** S. (2016). Earthquake-Altered Flooding Hazard Induced by Damage to Storm Water Systems. *Sustainable and Resilient Infrastructure*. Taylor & Francis, ISSN 2378-9689 (DOI:10.1080/23789689.2016.1178560).

Liu, M., **Giovinazzi**, S., Beukman, P. (2015). Post-earthquake performance indicators for sewerage systems. *Proceedings of the Institution of Civil Engineers - Municipal Engineer,* 169 (2), pp. 74-84.

Liu, M., Scheepbouwer, E., Giovinazzi, S. (2016). Critical success factors for post-disaster infrastructure recovery: Learning from the Canterbury (NZ) earthquake recovery. *Disaster Prevention and Management,* 25 (5), pp. 685-700.

Giovinazzi S., Brown C., Seville, E., Stevenson, J., Hatton T., Vargo J., (2016). Criticality of Infrastructures for Organisations. *International Journal of Critical Infrastructures*, 12 (4), pp. 331-363.

Brown, C., Stevenson, J., **Giovinazzi**, S., Seville, E., Vargo, J. (2015). Factors influencing impacts on and recovery trends of organisations: Evidence from the 2010/2011 Canterbury earthquakes. *International Journal of Disaster Risk Reduction,* 14, pp. 56-72.

Marotta, A., Goded, T., **Giovinazzi**, S., Lagomarsino, S., Liberatore, D., Sorrentino, L., Ingham, J., (2015). An Inventory of Unreinforced Masonry Churches in New Zealand. *Bulletin of the New Zealand Society for Earthquake Engineering*, 48(3), pp.171-190.

Bocchini, G. M., **Giovinazzi**, S., Pomonis, A., Pampanin, S., Ingham, J., King, A., (2015). New Zealand contributions to the Global Earthquake Model's Earthquake Consequences Database (GEMECD). *Bulletin of the New Zealand Society for Earthquake Engineering*, 48(4), pp. 245-263.

Jacques, C. C., McIntosh, J., **Giovinazzi**, S., Kirsch, T. D., Wilson, T., Mitrani-Reiser, J., (2014). Resilience of the Canterbury Hospital System to the 2011 Christchurch Earthquake. *Earthquake Spectra*, 30(1), pp. 533-554.

Esposito, S., **Giovinazzi**, S., Elefante, L., Iervolino, I., (2013). Performance of the L'Aquila (central Italy) gas distribution network in the 2009 (Mw 6.3) earthquake. *Bulletin of Earthquake Engineering*, 11(6), pp. 2447-2466.

Giovinazzi, S.,Wilson, T., Davis, C., Bristow, D., Gallagher, M., Schofield, A., Villemure, M., Eidinger, J., Tang, A., (2011). Lifelines Performance and management following the 22 February 2011 Christchurch Earthquake, New Zealand: Highlights of Resilience. *Bulletin of the New Zealand Society for Earthquake Engineering*, 44 (4), pp. 402-417.

Ferreira F., Dantas, A. Seville, E. **Giovinazzi** S. (2010). Extreme Events Decision Making in Transport Networks: A Holistic Approach Using Emergency Scenarios and Decision Making Theory. *Journal of the Eastern Asia Society for Transportation Studies,* 8, pp.

70-85.

Dolce, M., **Giovinazzi,** S., Iervolino, I., Nigro, E., Tang, A., (2009). Emergency management for lifelines and rapid response after L'Aquila earthquake. *Progettazione Sismica. Seismic Design Journal*, 3, pp. 215-223.

Giovinazzi, S., (2009). Geotechnical Hazard Representation for Seismic Risk Analysis, *Bulletin of the New Zealand Society for Earthquake Engineering*, 42 (3), pp. 222-234.

Giovinazzi, O., and **Giovinazzi**, S., (2008). Guidelines for a Sustainable Planning of Urban Waterfront after Disasters, PORTUS, 16, RETE Editor. ISSN.88-317-8632-6.

Lagomarsino, S., and **Giovinazzi,** S., (2006). Macroseismic and Mechanical Models for the Vulnerability assessment of current buildings. *Bulletin of Earthquake Engineering,* 4(4), pp: 415-443.

Book Chapters (peer-reviewed)

Giovinazzi, S., Kongar, I., Bocchini, G. M., Ottonelli, D., (2014). *Damage to Buildings: Modeling*, pp:1-20. In book: Encyclopedia of Earthquake Engineering, Publisher: Springer, Editors: Michael Beer, Ioannis A. Kougioumtzoglou, Edoardo Patelli, Ivan Siu-Kui Au. DOI: 10.1007/978-3-642-36197-5_357-1.

Kongar, I., **Giovinazzi**, S., (2014). *Damage to Infrastructure: Modeling*, pp:1-14. In book: Encyclopedia of Earthquake Engineering, Publisher: Springer, Editors: Michael Beer, Ioannis A. Kougioumtzoglou, Edoardo Patelli, Ivan Siu-Kui Au. DOI: 10.1007/978-3-642-36197-5_356-1.

Stevenson, J., **Giovinazzi**, S., Seville, E., Brown, C., Chang-Richards, Y., Suzanne Wilkinson, S., (2015). *From Disaster to Opportunity: Reviving Urban Function after the Canterbury Earthquakes.* In book: Cities at Risk: Planning for and recovering from natural disasters. Editors: Pierre Filion, Gary Sands and Mark Skidmore. Ashgate, UK, 2015. 97-137.

Technical Reports

Ferreira Pedroso, F., Teo, J., Seville, E., **Giovinazzi**, S., Vargo, J., (2015). Post-Disaster Challenges and Opportunities: Lessons from the 2011 Christchurch earthquake and Great Eastern Japan earthquake and tsunami. *Input paper prepared for 2015 Global Assessment Report on Disaster Risk Reduction and the United Nation Office for Disaster Risk Reduction.*

Brown, C., Seville, E., Stevenson, J., **Giovinazzi**, S., Vargo, J. (2015). Developing the Business Behaviours Module within MERIT. *ERI Research Report 2015/02.*

Seville, E., Stevenson, J., Brown, C., **Giovinazzi**, S., Vargo, J., (2014). Disruption and Resilience: How Organisations coped with the Canterbury Earthquakes. *ERI Research Report 2014/002.*

Allen, J., Davis, C., **Giovinazzi**, S., Hart, D.E., (Eds.) (2014*)*. Geotechnical & flooding reconnaissance of the 2014 March flood event post 2010-2011 Canterbury earthquake sequence, New Zealand. *Technical report prepared for the Geotechnical Extreme Events Reconnaissance. GEER Association, Report No. GEER035*. 134pp

Giovinazzi, S., (2012). CERA modeling tools. *Technical Report prepared for the Canterbury Earthquake Recovery Authority, CERA, of New Zealand.*

Esposito S, **Giovinazzi** S., Iervolino I., (2011). Definition of system components and the formulation of system functions to evaluate the performance of gas and oil pipeline. *Deliverable D2.4, WP2. Project: Systemic Seismic Vulnerability and Risk Analysis for Buildings, Lifeline Networks and Infrastructures Safety Gain, SYNER-G*. Project funded by the European Commission: N°: 244061, Call N°: FP7-ENV-2009-1.

Dantas, A., **Giovinazzi**, S., (2010). Benchmarking the readiness of Road Controlling Authorities to meet their obligations under the CDEM Act 2002. *New Zealand Transport Agency Research Report 409*. 2010/10. 90pp. ISBN 978-0-478-36453-8; ISSN 1173 3756.

Dantas, A., **Giovinazzi**, S., Seville, E. and Ferreira, F., (2010). A Diagnosis of State Highway Organisations' Decision-Making During Extreme Emergency Events. *Resilient Organisations. ResOrgs Reports. 2010/02.* 102pp

Giovinazzi S. (2009). Multi-hazards performance of geographically distributed systems. *Technical Report prepared for GNS Science and the Earthquake Commission, EQC of New Zealand.*

Seville, E., Fenwick, T., Brunsdon, D., Myburgh, D., **Giovinazzi**, S., Vargo J., (2009). Resilience Retreat: Current and future resilience issues. Resilient Organisations, *ResOrgs Research Report 2009/05*.

Balbi, A., **Giovinazzi,** S., Lagomarsino, S., (2004). Guidelines to increase the public administrators awareness of the seismic risk issues and to support them for the management of seismic risk" (In Italian, French and Catalan). *Monograph realized in the framework of RINAMED (Natural Risk Mediterranean Area) EC founded Project in collaboration with Liguria Ricerche s.r.l. and Civil Protection Department of Liguria Region* (available on www.rinamed.net/docs/result/lg_It.pdf).

Faccioli E. Frassine L., Finazzi D., Pessina V., Cauzzi C., Lagomarsino S. **Giovinazzi** S., Resemini S., Curti E., Podestà S. (2004). Synthesis of the application to Catania city. *Final report to Work Package 11. Risk-UE Project "An Advanced Approach to Earthquake Risk Scenarios With Application to Different European Towns"* funded by the European Commission. Project reference: EVK4-CT-2000-00014, Funded under: FP5-EESD

Lagomarsino S., **Giovinazzi** S., Podestà S., Resemini S. (2003). "Vulnerability assessment of historical and monumental buildings". *Final report to Work Package 5 Risk-UE Project "An Advanced Approach to Earthquake Risk Scenarios With Application to Different European Towns"* funded by the European Commission. Project reference: EVK4-CT-2000-00014, Funded under: FP5-EESD.

Giovinazzi S., Lagomarsino S., Lazzoni L., (2002). The seismic risk: hazard assessment, vulnerability analysis and damage scenarios. *Monograph (thematic dossier) realized in the framework GERIA project, Del Moro Editor, Italy*.

Papers in Conference Proceedings (referred and peer-reviewed)

Matassoni, L., Fiaschi, A., Giovinazzi, S., Pollino, M., La Porta, L., Rosato V. (2017). A geospatial decision support tool for seismic risk management: Florence (Italy) case study. ICCSA 2017, 17th International Conference on Computational Science and Applications, 07/2017 (submitted).

Kongar, I., Rossetto, T., **Giovinazzi**, S. (2017). Post-earthquake performance of interdependent electric power and water supply systems. 16WCEE Worls Conference on Earthquake Engineering, Santiago Chile, 01/2017.

Baker, J.W., Cremen, G., **Giovinazzi**, S., Seville, E. (2016). Benchmarking FEMA P-58 performance predictions against observed earthquake data – A preliminary evaluation for the Canterbury earthquake sequence. New Zealand Society for Earthquake Engineering Technical Conference, NZSEE Conference, Christchurch, 04/2016.

Akaa, O., Abu, A., Spearpoint, M., **Giovinazzi**, S. (2016). *Decision analysis of stakeholder views in the design of steel structures in fire*. Advances in Transdisciplinary Engineering, 4, pp. 523-532.

Davis, C. A., and **Giovinazzi**, S., (2015). *Toward Seismic Resilient Horizontal Infrastructure Networks*. 6th International Conference on Earthquake Geotechnical Engineering, 1-4 November 2015, Christchurch, New Zealand.

Davis, C. A., and **Giovinazzi**, S., Hart D. E. (2015). *Liquefaction Induced Flooding in Christchurch, New Zealand*. 6th International Conference on Earthquake Geotechnical Engineering, 1-4 November 2015, Christchurch, New Zealand.

Giovinazzi, S., Black, J. R., Milke, M., Brooks, K. A. Craigie, E., Liu, M., and Esposito, S., (2015). *Seismic Vulnerability Assessment of Wastewater Pipelines: Identifying and Ranking Vulnerability Factors after the Canterbury (NZ) Earthquake Sequence 2010-2011*. ASCE: Pipelines Conference 2015, Maryland, U.S, August 22-26, 2015.

Liu, M., **Giovinazzi**, S., and Lee P., (2015). *Seismic Fragility of Sewerage Pipelines*. ASCE: Pipelines Conference 2015, Maryland, U.S, August 22-26, 2015.

Esposito, E., **Giovinazzi**, S., Cavalieri, F. (2015). *Advanced post-earthquake damage assessment for non-pressurised pipes: learning from the Canterbury (NZ) earthquake sequence 2010-2011*. IF CRASC'15, Forensic Engineering Conference. Rome, 14-16 May 2015.

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